

THE WORLD'S FIRST AND ONLY AIR CARGO MAGAZINE

AIR **TRANSPORTATION**

Vol. 18, No. 1

JANUARY, 1951

★ ★ ★ INCLUDING AIR COMMERCE ★ ★ ★



Featured in This Issue

The Pacific Airlift is a Dramatic Lesson to International Shippers
The Experience and Errors of Surface Transportation Are Air Cargo's Gain
Cargo Safety Begins with the Packer
It's Skyfreight Everywhere
A New Picture of the Stratofreighter



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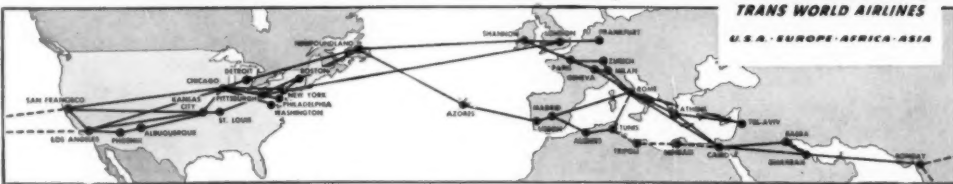
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AIR TRANSPORTATION

Established October, 1942



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AIR TRANSPORTATION, published once each month, thoroughly covers the entire air cargo industry for the benefit of all those engaged in shipping and handling domestic and international air freight, air express, and air parcel post, as well as using the domestic and international air mail services. Included in AIR TRANSPORTATION'S wide coverage are: air shipping, cargo plane development, rates, packaging, materials handling, documentation, air cargo terminal development, insurance, routing, interline procedures, new equipment, commercial airlines, military air transport service, air freight forwarders, personnel.

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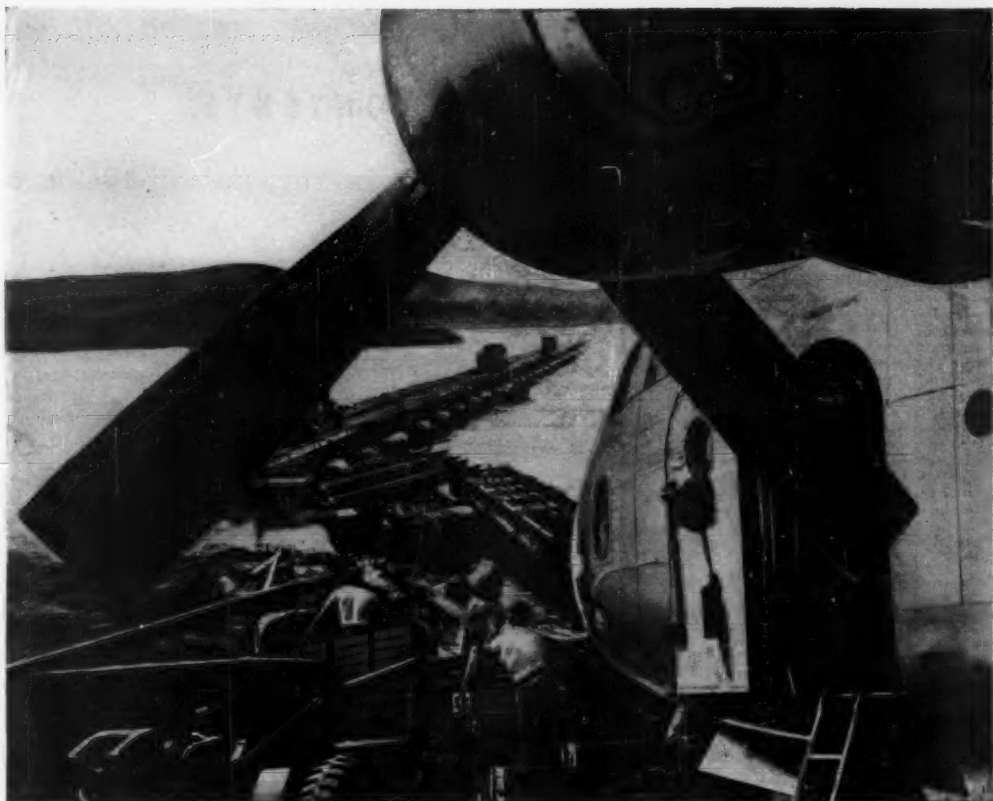
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COVER

Cargo-laden trucks line up at one of the four cargo doors of the Boeing C-97A Stratofreighter. This 300-miles-an-hour United States Air Force airfreighter can accommodate a maximum payload of 53,000 pounds of cargo. See Alan F. Kelsey's story on Page 6.



The Bridge That Flew To Korea ... Overnight!

All bridges across the Han River had been destroyed by retreating North Korean Communist armies, holding up the United Nations advance. We needed to bridge the Han in a hurry.

Back in Japan, U. N. troops prepared a 256-ton, 600-foot pontoon bridge—in sections—to fit into the U.S.A.F. Combat Cargo Command's Fairchild C-119's. Piece by piece, plane by plane, they flew

the bridge to Korea overnight!

Here again, Fairchild C-119's displayed unique versatility—under rigid military conditions. Battle-tested, tough and rugged "Flying Boxcars" are airlifting everything for the Army, Air Force and Marine Corps—personnel, trucks, ammunition, hospital equipment—even BRIDGES! It is the backbone of the airlift to Korea today.



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The Pacific Airlift Is A Dramatic Lesson to International Shippers

By JOHN E. MUHLFELD

General Sales Manager
Pan American World Airways

AIR CARGO HAS GROWN UP and made good.

The growth of air cargo, which has been nothing short of phenomenal, should continue at a steady pace in 1951 unless adverse world conditions change the picture.

It is tragic but true that any consideration of air cargo in 1951 must take into consideration the unsettled condition of the world and the possibility of a full-scale war breaking out.

However, it may be noted that, despite the major contribution made by the civilian airlines to the Korean airlift during the past six months, international air cargo volume for 1950 will show a considerable increase over 1949.

This is eloquent testimony to the importance of air cargo in the national defense and also to the maturity and flexibility of the industry in that it was able to provide this vital aid to the United Nations forces in Korea and at the same time continue cargo operations.

Pan American World Airways estimates that air cargo for 1950 will be 20 percent greater than in 1949. We expect that in 1951 we will gain another 20 percent over 1950.

This prediction is based on a variety of reasons, but one of the main contributing factors should be the trend to establish specific commodity rates for a greater number of commodities.

Specific commodity rates have been responsible for many types of shipments hitherto carried only by surface carriers. Coffee, for instance, is now flown in considerable quantities, mainly because of the specific commodity rate.

Another factor which may bring about a marked increase in international air cargo should be the economic recovery of Europe and, hopefully, parts of the Far East.

In the years immediately following the war, it was often difficult to obtain loads coming to the United States, although there was a great demand for rush shipments both to Europe and to the Philippines, Japan and China.



But in 1950 there was a considerable upswing in cargo from Europe and the Far East to the United States.

Although the demand for rush shipments of United States goods leveled off somewhat in 1950, a revival of industry in Germany and other European countries resulted in greatly increased westbound loads.

Such items as lace from Manila and small manufactured goods from Japan helped to swell inbound loads for transpacific carriers.

Latin America, where the airplane has played such an important part in the development of commerce, and where in some instances it has been the only major means of cargo transportation, continues to be a fertile

field for air cargo.

In 1950 Pan American estimates that it flew about 15,000,000 pounds in its Latin American Division, using a fleet of nine C-46s and three DC-4s exclusively as freighters.

The Latin American cargo operation now requires a 67,500-square-foot terminal in Miami and employs 750 people and we see every indication that cargo business between the United States and Latin America will increase.

Increased trade between the United States and Latin America, of course, has been and will continue to be the chief reason for the great success of air cargo in that part of the world.

As the dollar position of the Latin American countries improves they are letting down the bars on import restrictions, reducing red tape, and taking more and more items off the restricted list.

The obvious advantages of air cargo are being brought home more and more to shippers and the airlines have demonstrated that weight and bulk problems no longer loom so large as they did in the past.

Some outstanding examples of the type of shipments handled by air last year include refrigerators and electric

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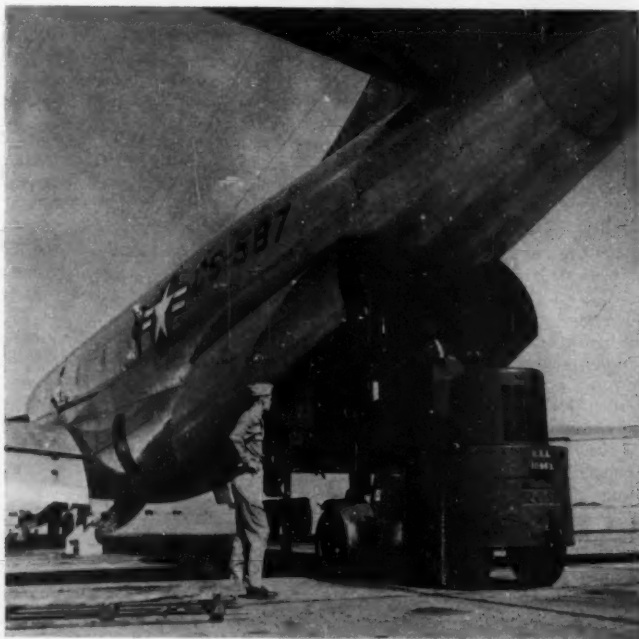
ALL FOURS DOORS of Stratofreighter—one large clam-shell-type rear door under tail, two lower deck doors on left side, and new forward door—are in use at the same time, enabling loading in two-thirds the former time.

Had this article been written a year ago, it would have stressed commercial operation; but in view of today's horrible events, emphasis has been placed on military operation. In any event, here's

A New Picture of the Stratofreighter

By ALAN F. KELSEY

Project Engineer, Boeing Airplane Company



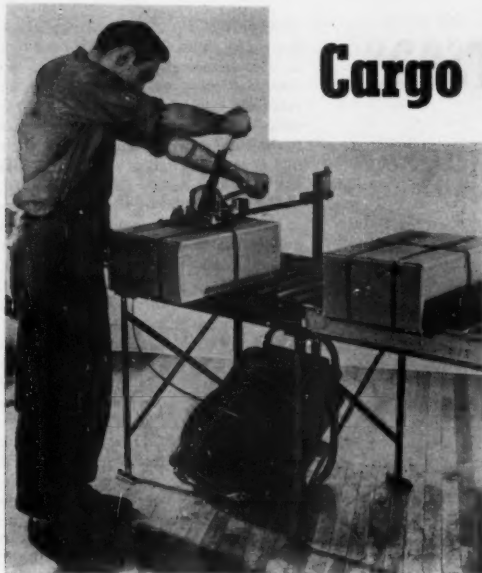
FORK LIFT TRUCK moves Korea-bound freight right into bowels of Stratofreighter.

DURING the 1949 ASME-IAS-SAE meeting, General William H. Tunner made the statement:

"I believe the key to having an adequate number of transport type aircraft in the event of war is in having a large scale commercial air cargo business in the U. S. as well as a similar air passenger business."

At that time it was not generally realized that the need for large numbers of cargo aircraft would develop so quickly. The events of the last six months strongly emphasize the soundness of General Tunner's statement; a number of commercial cargo aircraft would have done much to alleviate the critical supply problem at the outset of the Korean war. The only change required to put a commercial *Stratofreighter* into military operation would be the change in insignia—providing the CAA and military services eliminate the differences in their requirements and thus make the military transport certifiable. The versatility of the *Stratofreighter* makes it capable of doing both jobs. The lack of standardization in requirements increases the cost of aircraft for both the commercial operators and the Government. For example, the Air Force requires a Zone 1

(Continued on Page 28)



Cargo Safety Begins With the Packer

STEELSTRAP STRETCHER AND SEALER mounted on conveyor line insures uninterrupted flow of production, lending speed to shipments.

FOR THE HOT WAR IN KOREA—part of a shipment (below) of 25,000,000 Halazone tablets, manufactured by Abbott Laboratories, of North Chicago, to be utilized for water purification purposes.

THE hot war has struck home with the impact of a 60-ton tank. Everyone is asking himself the same question, "What does it all mean to me?"

Business, too, is tightening its belt and trying to foresee the effects of partial mobilization. The President's multi-billion preparedness program has awakened industry to the need for immediate adjustment to the situation. Priorities, allocations and war production are back on the scene.

Logistics—the science of supply—which experts stress as crucial to United Nations military success, is looming large again on the industrial front. For the supply lines leading to strategic objectives in the hot areas begin in the packing and shipping departments of industry.

Delivering air cargoes safely and securely becomes a problem of added importance. Military specifications must again be met, packing operations streamlined, former domestic shipments strengthened for overseas transit; and all done with an eye to cutting costs.

This problem of logistics should be met by a team of specialists—the materials handling engineer, shipping superintendent, and the export manager. Export men, in particular, are familiar with the bugaboos of long-distance shipping. They realize that cargo is subject to damage at every turn in its journey through countless handlings from origin to destination.

Now with many armed force handlings added to each routing, danger of damage will be increased. Shipments



must be made sturdy enough to withstand the worst. It is essential to the war effort that each carton of materials arrives in perfect condition.

Firms which have concentrated on domestic distribution will probably face the more difficult adjustment. However, a few tips passed on by export men may be helpful in reducing costs and stepping up efficiency.

Soft goods should be prepacked in lightweight protective material and compressed into bales by means of steel strapping. This method makes them resilient, minimizing the degree of probable damage and maximizing the savings in gross weight and cubic volume.

Cased goods should be grouped in the

largest possible units convenient for handling and shipping. When transported in small, bulky packages, these goods generally take the most punishment. Unit loads, securely strapped to expendable pallets are perhaps the best answer to this knotty problem.

Another solution, based on the same principle has been offered by a Brooklyn export packing firm. Convinced that nailed wooden boxes were too cumbersome for efficient shipping, they designed a lightweight plywood van. These huge lift vans are constructed with internal framework, leaving no cleats or outside braces to be snagged or damaged in transit.

(Concluded on Page 30)

United States Overseas Air Cargo Services

By N. W. KENDALL

Transportation Division
Office of Domestic Commerce
United States Department
of Commerce

PART X

Characteristics of Service

THE FOLLOWING DESCRIPTION of United States overseas air cargo services rendered by certificated carriers is based in part on the operations of Pan American World Airways. Information was obtained directly through interviews in November, 1948, with representatives of the company and from international air cargo tariffs and manuals prepared by the carrier.

Service is characterized by speed, reliability and convenience. The cruising speeds of aircraft used in carrying cargo range from approximately 175 miles per hour for a DC-3 to approximately 300 miles per hour for a DC-6 or *Constellation*. By way of comparison vessel speeds range from approximately 11 miles per hour for a Liberty ship to 18 miles per hour for certain ships of C-3 type.

Reliability of service is manifested in a low loss and damage ratio. According to the company, Pan American's loss and damage expenses average less than 0.1 percent of gross cargo revenues. It is maintained that service is so much swifter than the fastest steamship service that cancellation of a scheduled flight is of little moment to shippers, since delay from this source amounts at most to 24 hours. Tracing of shipments is reportedly made comparatively simple because of complete records which are made of time of arrival and departure of each shipment at each transfer point. Another aspect of reliability is virtual elimination of pilferage.

Convenience of service results from operations directly to foreign points not served by steamships except through transshipment at nearest ports, and from expedited pick-up and delivery, and

transfer at junction points. No pick-up or delivery services are provided by Pan American itself, but an independent expressman is available who makes delivery of imports if the consignee so directs. In that event, a customs broker at the airport clears the shipment, pays any duty required, and sends his bill for duty, brokerage fee and delivery charges with the shipment, c.o.d. Pick-up service is also provided, at the request of the consignor. Charges for pick-up or delivery are in addition to the airport-to-airport rate. Interline agreement provides that each line make delivery of transshipments to the receiving station of the next carrier. Thus export shipments are delivered to Pan American by domestic carriers.

While speed, reliability and convenience generally characterize the services under consideration, countervailing conditions may be present on occasion. For example, speed of service may be retarded by flight cancellations, by delays in clearing through Customs, either in the United States or abroad, by holding shipments at the airport after arrival, or by delays in connection with transfers to connecting carriers. Service may be unreliable where tracing facilities are inadequate or where prompt settlement is not made for loss or damage. Scheduled service may be less convenient than that offered by a noncertificated irregular air carrier in cases where the latter has a plane available at exactly the time the shipper requires service, or when the shipment amounts to a plane load and can be picked up at a field near the shipper's plant.

With respect to the relative economy of air cargo service to the shipper, the main discussion is reserved for a later section. It may be noted here that,

while port-to-port rates on general cargo moving by steamship are only a fraction of corresponding air cargo rates, the rates are more nearly competitive on relatively valuable cargo. Moreover, the airlines claim a number of advantages to the shipper which tend to offset their higher rates, including reduction of loss and damage; lower packaging costs; decreased inventory costs; and savings in interest on investment while goods are in transit. Finally, it is clear that the differential in rates has no significance in many emergency shipments, which must move by the fastest medium of transportation, regardless of cost.

Turning now to a brief description of the operating procedures of the carriers and the shipping procedures of exporters and importers, it may be noted first that business is solicited by advertising, sales folders sent by mail, and by personal calls. Where volume of business may be substantial, a transportation survey is made free of charge by Pan American's traffic experts. The company has numerous large and small customer accounts, divided approximately equally.

From the standpoint of the carrier, forwarders are primarily sales agents. These agents provide receiving stations for air cargo, prepare export documents and airwaybills. They collect the tariff charges from the shippers and are paid a commission of five percent on collections. . . . Pan American obtains approximately one-half of its air cargo business through such agents. The company maintains sales offices overseas to obtain return loads. Since cargo planes operate on regular schedules, return loads are not arranged with any reference to outgoing shipments from the United States.

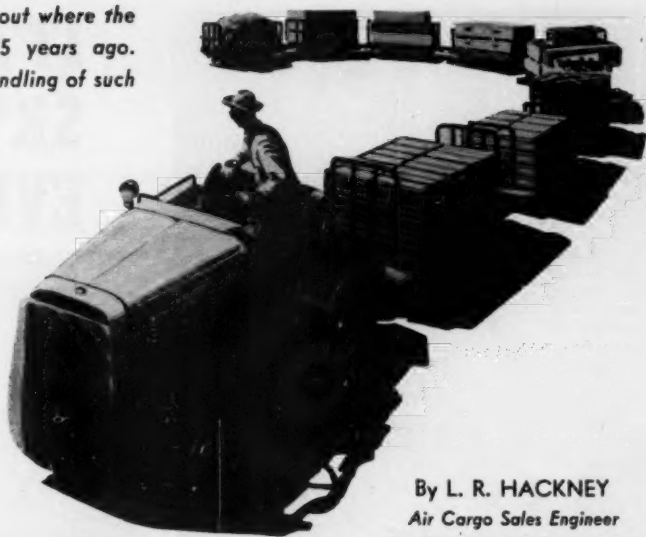
Except in out-of-the-way airports, Pan American arranges to have loading and unloading of cargo performed by contractors. At major airports, the carrier maintains both refrigeration and heating. Any shipments which need refrigeration while in transit are packed in dry ice. The company has only one cargo terminal separate from its airport receiving stations, which is in New York City; and it maintains no warehouses other than one in Havana, which is leased and operated by the Cuban Government. In other foreign countries, shipments not called for immediately by the consignee are deposited in a government warehouse.

Shipping procedures may be summarized as follows. The shipper must deliver consignments either to a sales agent or to the carrier's receiving station at the airport. An airwaybill must be prepared by the shipper or his agent. On September 1, 1948, Pan American

(Continued on Page 27)

Air freight, says the author, is about where the motor transport industry was 25 years ago. In matters concerning terminal handling of such cargo, he advises that . . .

The Experience And Errors Of Surface Transportation Are AIR CARGO'S GAIN



By L. R. HACKNEY
Air Cargo Sales Engineer
Lockheed Aircraft Corporation

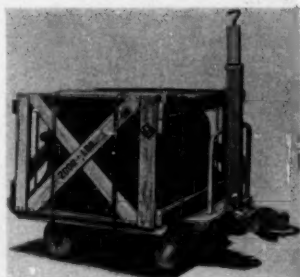
IN school we were shown by the geometry instructor that "a straight line is the shortest distance between two points." Unfortunately, in air cargo handling procedure, for the most part, we have failed to heed this sage bit of knowledge.

Surveys of material-handling flow patterns used by the air transport industry throughout the United States indicate that the air cargo handlers apparently have fallen in love with their cargo, for it seems that practice is—the longest way there, is the sweetest. This,

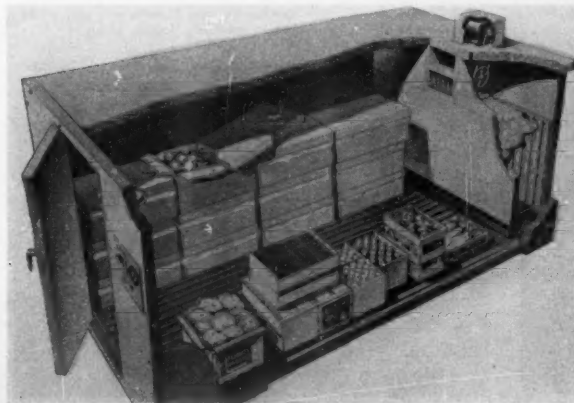
perhaps, is a somewhat severe criticism, for it is realized in many instances the material flow pattern is motivated by circumstances entirely beyond the control of the airline ground operations personnel.

Fortunately, during the past year there has been industry-wide recognition of the air cargo handling problems. Several very commendable papers on the subject have been presented at various technical sessions throughout the country. Organizations directly con-

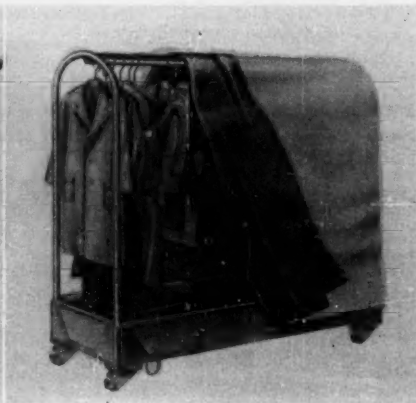
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AEROCART



AEROGARMENT RACK



AEROCOOLER



MONTREAL—"Sandy" Sainderichin, freight manager for Air France, examines the first shipment to arrive from Paris.

IT'S SKYFREIGHT EVERYWHERE!



NEW YORK—Workings of the Whiting Loadair explained by Juan Ucos, of Avianca (left), during Air Cargo Day.



MIAMI—Unloading 6,100 pounds of roasted Jamaica coffee. This is the first of a weekly shipment via Pan Am.



MINNEAPOLIS—Northwest's George Knox explains why and wherefore of air cargo at Minneapolis Fashion Show.



SAN FRANCISCO—Slick Airways offloads a pleneload of denim fabric following a chartered flight from North Carolina.



BURBANK—Four of Flying Tiger's recently acquired 18 C-46s waiting for modification. FTL now owns 44 cargo planes.

USE
AIR
FREIGHT



USE
AIR
EXPRESS

VOL 18

JANUARY, 1951

NO. 1

ILLEGAL FORWARDERS HIT

World's No. 1 Air Freight Carrier, Avianca Claims

NEW YORK—Analysis of figures compiled by Avianca, the Colombian airline, has brought a claim of world air freight leadership. The carrier based its claim on statistics covering the January 1-September 30, 1950, period.

Flying 73 percent more freight than during the same period of the previous year, Avianca hauled a daily average of approximately 125 tons. Sixty-two percent of the latter figure was carried on the airline's all-cargo services. Avianca said that its top month was August when the daily average rose to 150 tons. A company representative said:

"Colombia's rugged terrain and absence or inadequacy of other transportation facilities account for much of the popularity of air transportation in the country. The line carries over twenty tons of newspapers daily, and other cargo consists of bulk movements of fresh vegetables, seafood,

(Concluded on Page 13)

Civil Aeronautics Board Warns All Unauthorized Forwarders

WASHINGTON, D. C.—The Civil Aeronautics Board has issued a statement which indicates that "numerous persons may be engaged indirectly in air transportation as freight forwarders without first having obtained appropriate authority in accordance with the provisions of Parts 296 and 297" of the CAB's Economic Regulations. Stressing the fact that unauthorized air freight forwarding operations are in violation of the Civil Aeronautics Act of 1938 (as amended), the Board pointed out that regulations require forwarders to file tariffs and otherwise qualify for a Letter of Registration. Violation of the Act, the Board said, may bring "possible consequences" to the guilty parties.

In its formal statement to the press, the CAB stated:

"Examples of the kinds of services which are considered by the Board to constitute freight forwarding may be found in the activities and operations of American Shippers, Inc., and Metropolitan Air Freight Depot, Inc., which are the subjects of cease and desist orders issued by the Board simultaneously with this statement. During January and February, 1950, the Board instituted investigations into the activities and operations of these two companies to determine whether they had engaged or were engaging indirectly in air transportation in violation of the Civil Aeronautics Act. Thereafter, the respondents submitted a proposal for settlement of the proceedings, which included a stipulation of facts and consent to the issuance of a cease and desist order. The respondents' general method of operation as described in the aforesaid stipulations is as follows:

"(a) Shipments are received by the respondents at their terminal and a receipt therefor is issued to the shipper. All such individual shipments to the same destination are assembled and consolidated into one shipment.

"(b) A shipping manifest or airbill manifest is prepared in quadruplicate covering all such individual shipments. One copy of such airbill manifest or shipping manifest is later attached to the respondents' statement of charges, one copy thereof is retained by the respondents and two copies thereof are attached to the airbill of the direct carrier under which the consolidated shipment is transported, one to be used by the direct carrier as a delivery receipt and the other to be given to the ultimate consignee at the time of delivery.

"(c) The direct carrier on which such

(Concluded on Page 12)

LANSA in Interline Pacts With 3 U. S. Air Carriers

NEW YORK—Interline traffic agreements with National Airlines, Chicago and Southern Air Lines, and Braniff International Airways have been entered into by Lineas Aereas Nacionales, S. A., national Colombian airline. Connections are made in Havana for Medellin, Cartagena, Cali, Manizales, and Armenia, via Barranquilla.

Air Transportation's Managing Editor Wins TWA Writing Award

NEW YORK—First place in Trans World Airlines' Mid-Century Aviation Writing and Picture Competition has been won by Richard Malkin, managing editor of AIR TRANSPORTATION, for the best aviation development work to have been published in an American magazine during the past year. The award, an important honor in aviation journalism, carries with it a cash prize, a commemorative plaque, and an all-expense-paid vacation at Las Vegas and Phoenix.

Judges for the competition were Dr. Frank Luther Mott, dean of the Journalism School of Missouri University; Bruce Barton, advertising executive and former editor of *American Magazine*; and E. O. Cooke, well-known aviation figure and TWA vice president.

Malkin's prize-winning work was a series of articles on the historic Operation Vittles, written after spending several weeks flying the lift between the various United States and British bases in Germany and blockaded Berlin. The series had a specialized slant, providing an important lesson to the various components of commercial shipping on what air freight transportation really can do.

Malkin, who is the author of the book, *Air Freight Transportation* (La Salle Extension University), which is recognized as the first text book devoted entirely to that subject, is also a fiction writer of some note. His stories have appeared in such national publications as *Collier's* and *Time* and *Country*. In 1948, he won the coveted O. Henry Memorial Award for what was hailed as one of the best short stories published the previous year. It was included in an anthology and since that time has been printed in a number of foreign languages.

Within the next few weeks, Richard Malkin's newest book, *Boxcars in the Sky*,

(Concluded on Page 14)

American, KLM, Scandinavian Order More Transport Planes

NEW YORK—Three of the world's great air carriers—American Airlines, KLM Royal Dutch Airlines, and Scandinavian Airlines System—are going ahead with plans to enlarge their transport fleets, thereby adding more cargo space for shippers.

According to an announcement made by C. R. Smith, president of American, his company has placed orders with Douglas Aircraft for three more DC-6Bs, of which type the company already has 11 on order. The line said that "the extra 61

inches in length of the DC-6B will be used for cargo space."

Seven of the same type planes have been ordered by KLM. Dr. Albert Plesman, president of the Dutch airline, pointed out that KLM, which like Douglas is 30 years old, has purchased every new transport of the DC series. In addition, KLM has purchased five new 1049C Super-Constellations from the Lockheed Aircraft Corporation. It is the first foreign carrier to purchase this new-type plane which is reputed to have a top speed of nearly 370 miles an hour.

Tore H. Nilert, president of Scandinavian's New York office, declared that two DC-6Bs will supplement the system's 70-plane fleet. Delivery is expected late this year.

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NEW YORK direct to COLOMBIA

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Organized 1919

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Illegal Forwarders Hit

(Continued from Page 11)

consolidated shipments move is selected by the respondents. The airbill of the direct carrier is prepared by the respondents and shows the respondents as the consignor and consignee of the consolidated shipment. Neither the original shipper nor the ultimate consignee receive a copy of the airbill.

"(d) Break bulk and distribution services are performed at the point of destination by the direct carrier as agent for respondents.

"(e) All charges including charges for the transportation are collected by the respondents. Respondents' charges to the individual consignee are less than the direct carrier's rate for the individual shipment and greater than the individual consignee's proportionate share of the direct carrier's bulk charge on the consolidated shipment.

"(f) Respondents' services have been and are widely advertised and shipments are actively solicited and accepted from the general public."

The preceding operations, the CAB believes, "constitute air freight forwarding within the meaning of Parts 296 and 297," the conduct of which services, without a Letter of Registration, is in violation of the Act. It pointed out that guilty parties are subject to enforcement action under the provisions of Section 1002 or 1007 of the Act, "or to criminal penalties for

continued violations under Section 902 of this statute." Referring to both freight forwarding firms, the Board declared:

"Both American and Metropolitan now seek Letters of Registration as air freight forwarders, and this request has presented the major issue of whether their violation of the Act by engaging in air transportation as freight forwarders without having first obtained authorization from the Board should militate against the issuance of Letters of Registration to them. In view of the fact that these are the first proceedings of this kind involving compliance with the requirements of Part 296 or 297 before engaging in indirect air transportation, we have determined in this case to approve the stipulations, issue cease and desist orders and grant their requests for Letters of Registration. However, by this statement the Board intends to place all such persons on notice that it will not hereafter countenance such violations. Not only will those persons who are engaging in freight forwarding activities without authority be subject to appropriate enforcement action, but the Board, in reviewing other pending and future applications for Letters of Registration under Parts 296 and 297, will consider the nature and extent of any previous violations of the Act by the applicants in determining whether the issuance of a Letter of Registration as an air freight forwarder would be adverse to the public interest. It is, therefore, imperative that all such persons, for their own protection, undertake to achieve compliance with the Act and Parts 296 and 297 of the Economic Regulations by making application and qualifying for a Letter of Registration."

ROA Honors Seaboard

NEW YORK—A certificate of merit for its outstanding contribution "to the national defense by providing logistical support to the United States Air Force in connection with the Berlin airlift in 1948 and during the United Nations' action in Korea in 1950," has been awarded Seaboard and Western Airlines by the Reserve Officers Association of the United States.

New Sabena Office

TEL AVIV—Sabena has opened a new office at 11 Rue Montefiore, here in the Israeli capital. George Machine heads it as manager. The Belgian airline operates between New York and Lydda on a weekly basis.

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Tony Orta Dies

BRUSSELS—The widely known pioneer in Belgian aviation, Tony Orta, passed away recently. He was 62.

A pilot since 1911, Orta had served as a director and general manager of Sabena. He served in Belgian military aviation in both world wars, and during the last one directed Sabena's operation of an airlift linking South Africa and the Congo with the Allied armies in North Africa and the Middle East.

A year after the organization of SNETA in 1919, King Albert designated Orta as chief of operations. Under the latter's direction, the King Albert Airline, operating between Leopoldville and NGombe in the Belgian Congo, was established. When Sabena took over in 1923, Orta became head of Sabena-Africa. He was responsible for building up the Belgian airline's vast African route and establishing its initial intercontinental route. In 1942 he became a director of the company, and three years later general manager.

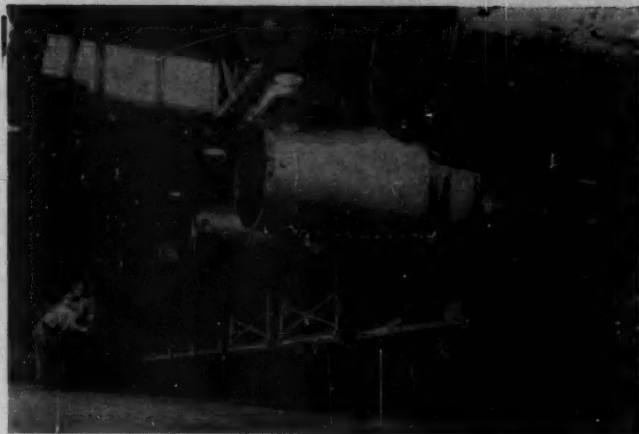
Avianca Issues Claim

(Continued from Page 11)

textiles, machine parts, livestock and household appliances. Even concrete pipe, steel reinforcing bars, gas ranges and water heaters are not uncommon as cargo, and large-scale shipments of coffee have been moved this year due to interruption of steamer service on the Magdalena River."

Avianca is an affiliate of Pan Am. Besides a fleet of modern passenger airliners, it operates an all-cargo fleet consisting of six DC-3s, two DC-4s, and five C-46s.

LINE-UP OF POWER



Resembling a line of cannon, these J-47 jet engines for Air Force planes await test runs at the General Electric Company's River Works at Lynn, Massachusetts. The day is not too far off when the world's cargo aircraft will be powered by such engines, working an even greater revolution in the carriage of goods by air. Air cargo breeds on speed.

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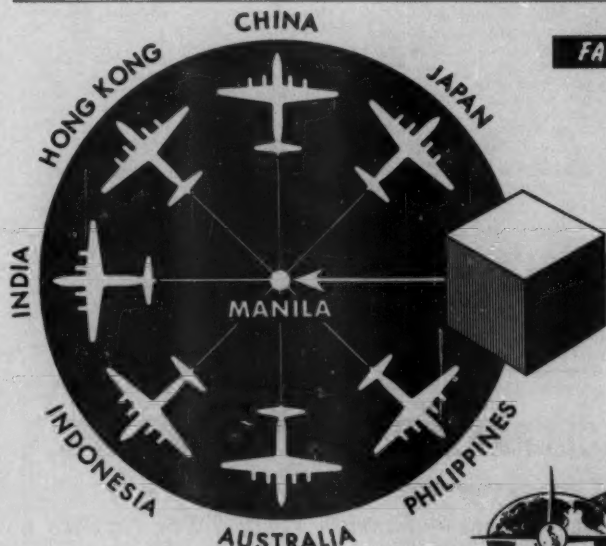
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JANUARY 1951—PAGE 13

AMA's 20th Packaging Exposition April 17-20

NEW YORK—The 20th National Packaging Exposition sponsored by the American Management Association, has been scheduled for April 17-20, to be held in the Auditorium at Atlantic City.

Arrangements for the exposition are under the direction of Clapp and Poliak, New York City. Robert D. Handley, advertising manager, Sylvania Division, American Viscose Corporation, is chairman of the Exhibitors' Advisory Committee.

The committee includes: A. B. Cluman, manager, Pliofilm Sales Department, General Products Division, Goodyear Tire and Rubber Company, Inc.; Alan S. Cole, vice president and general manager, *Modern*

Packaging; J. M. Cowan, assistant director of distribution, The Dobeckmun Company; N. A. Fowler, director of sales and research, General Box Company.

Also on the committee are: M. Gaukerud, Sales Research Department, Container Corporation of America; William E. Haberland, sales manager, Container Equipment Corporation; D. S. Hopping, director of sales, Transparent Films Department, Celanese Corporation of America; S. Y. Hyde, Sales Promotion Division, American Can Company; M. P. Junkin, vice president, Sales and Development, National Metal Edge Box Company; N. Joseph Leigh, chairman of the board, Einson-Freeman Company, Inc.; B. C. Lewis, general manager, Peters Machinery Company; Clarence F. Manning, vice president, Reynolds Metals Company; Russ Matthews, sales promotion manager, Bakelite Division, Union Carbide and Carbon Corporation; Paul Meelfeld, assistant vice president, The Hinde and Dauch Paper Company; Tom Miller, vice president in charge of sales, Package Machinery Company; Glenn Stewart, advertising manager, Kalamazoo Vegetable Parchment Company; Floyd L. Triggs, advertising manager, Riegel Paper Corporation; Mills W. Waggoner, general sales manager, Better Packages, Inc.; Richard Wellbrock, vice president in charge of sales, New Jersey Machine Corporation; Ben M. Williams, manager, Sales Promotion, Gaylord Container Corporation.

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TWA Writing Award

(Continued from Page 11)

will be published. It is the first book-length story of air cargo and covers the field entirely. The volume is profusely illustrated with photographs; the text is written in non-technical language which can be readily understood by the layman.

Two of the 14 additional winners in the magazine, newspaper, technical, and photography classes set up by TWA, are former Pulitzer Prize winners: Stanton

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20-YEAR MAN



T. E. Braniff, president of Braniff International Airways (left), receiving the airline's first 20-year diamond pin from Vice President Ray C. Shrader. Although the name, Braniff, has been on transport planes for 22 years, it was not until November 3, 1930 that the company was incorporated—the official starting date as far as the 20-year pins are concerned. Here's to a big future!

Delaplaine, *San Francisco Chronicle*, for distinguished reporting in 1942; and Nat Fein, *New York Herald Tribune*, for news photography in the same year.

Other first-place winners in the magazine class were James Winchester, *King Features* (best personality story); and Tom Bernard, *American Magazine* (best travel story).

Newspapers with more than 50,000 circulation: Stanton Delaplaine, *San Francisco Chronicle* (best travel feature); Leon Schloss, formerly of *International News Service* (best news reporting); Robert H. Estabrook, *Washington Post* (best editorial).

Newspapers with circulation of 50,000 or less: Clair Stebbins, *Zanesville Signal* (best editorial); Peter L. Stevenson, *Lock Haven Express* (best travel feature); Elyne Conel, *Thru the Windsock* (best news reporting).

Technical class: Richard E. Stockwell, *Aviation Age* (best operation and development story); Eric Bramley, *American Aviation* (best sales and promotion story); William V. Henzey, *American Aviation* (best business and financial story).

Photography: Nat Fein, *New York Herald Tribune* (best black-and-white photograph); David R. Wallin, *St. Louis Post-Dispatch* (best color photograph); Emil Herman, *King Features* (best black-and-white photograph in general interest magazines or Sunday newspaper magazine supplements).



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TRANSPORT TIDINGS

PAN AM reports that it has reached an agreement with Nicaraguan Customs authorities. As a result, cargo is being unloaded into a truck under Customs supervision and transported to Managua's main Customs office, bypassing airport handling . . . The airline recently set an all-time international air cargo record when it airlifted 96,967 pounds of exports to Latin America in a single day . . . Pan Am has been hauling 6,000 to 8,000 pounds of coffee a week, from Kingston to Miami.

SABENA advises that the volume of mail flown in Belgium by its two Bell helicopters "has been somewhat larger than expected this early in the service." It is understood that some express is being hauled in addition to mail . . . According to Fernand J. Martens, United States manager of the Belgian airline, textiles, clothing, hosiery, electrical equipment, machinery, and precision instruments accounted for 43.8% of the New York-Europe freight during the first half of the past year.

CANADIAN PACIFIC has added two more DC-4s to its transpacific services. No doubt these will go into the United Nations airlift to Japan.

From AIR FRANCE comes word that it is operating an air freight run between London and Algiers, with refrigerated foods making up a large part of the payloads . . . The French airline recently opened a route between Fort Lamy and El Geneina in the Anglo-Egyptian Sudan.

During the first nine months of 1950, REA handled more than 2,966,000 air express shipments. This represented an increase of 15½% over the same period in 1949. Average weight was set at 19.2 pounds.

Flying boats will be returned to BOAC service when the giant *Princess* is readied at Hythe, England. The British carrier has three such aircraft on order.

S. S. Kreisler, preliminary design engineer for DOUGLAS, recently revealed that the C-124A *Globemaster II* has exceeded its design load-carrying capacities. It took



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off at a gross weight of 194,500 pounds. According to Kreisler, the plane can haul some 50,000 pounds more than 2,500 statute miles with adequate fuel reserves. On shorter flights, maximum payload may be upped to 70,000 pounds. Original specifications called for a gross take-off weight of 175,000 pounds.

The word is that EASTERN may switch its headquarters from New York to Miami. Captain Eddie says it would be more economical in the South.

Slick, Tigers Expand

BURBANK, CALIFORNIA—Forty thousand additional square feet of maintenance space will be provided in two huge aircraft hangars being built at the Lockheed

Air Terminal for Slick Airways and the Flying Tiger Line. Increased commercial and military air freight operations have prompted the building of the hangars which will cost \$350,000. Construction is by the Anderson Company. Work will be completed next month.

Colonial Improves Service

NEW YORK—Nearly an hour-and-a-half have been lopped off Colonial Airlines' flying time between Washington, D. C., and Ottawa, with Syracuse designated as a single stop on the route between the United States and Canadian capitals. The line's air time between New York and Montreal also has been reduced, with the Albany-Montreal leg faster by 30 minutes.

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MAILBAG MEMOS

Having received your October 1960 issue of *Air Transportation* only today, I hasten to mail this letter in form of correction or advisement of new developments in *Air Transportation*.

I have just finished reading the captioned article, *United States Overseas Air Cargo Services*, by N. W. Kendall, which I have found very interesting, but, shall we say outdated, because of the following, which I feel, not only in the operation of this firm, (Flying Cargo, Inc.) as entirely prejudicial, but to the whole air freight forwarding industry.

In the interest of the air freight forwarders, I would appreciate the addition of the seventh distinct class of "Common Carriers," namely: "International Air Freight Forwarders" operating pursuant to Section 297 of the Economic Regulations and the obvious retraction of the

last sentence of the second from the last paragraph of the article, viz: "The international air freight forwarder now functions legally as an agent, but not as an indirect carrier."

Inasmuch as the Civil Aeronautics Board has seen fit to establish the classification of "International Air Freight Forwarder" which became effective on the 24th day of April, 1960 (six months before present publication), and the certification of Flying Cargo, Inc., on the 24th day of July (three months prior to this publication). The writer is at a complete loss to understand how the articles being printed are not checked for accuracy, especially on such a highly controversial issue which the publishers have always maintained to be the greatest exponents of this industry.

In anticipation of your duly published retraction notice, may I wish you continued success and factual reporting as in the past.

Sincerely,

JOHN G. HENWOOD
President
Flying Cargo, Inc.

(Editor's Note: The portion of the work,

"Airlift"
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United States Overseas Air Cargo Services, referred to by Mr. Henwood, was the seventh in a series of installments. The first installment carried an explanation written by H. B. McCoy, director of the Office of Domestic Commerce, in which he distinctly pointed out that the study did not go beyond the year 1961. Since the other columns of *Air Transportation* keep its more than 6,000 readers up to date on air freight forwarding activities—even to the point of publishing the CAB regulations—we can see no disservice done. Naturally, the certification of Flying Cargo, Inc., also appeared as a news item in this magazine.)

USAF Now Can Drop 5 Tons in Only 7 Seconds

WRIGHT-PATTERSON AIR FORCE BASE, DAYTON, OHIO—A new overhead monorail system installed in the United States Air Force cargo planes has made possible the parachuting of 10,000 pounds of cargo in a 1,500-foot area—all in a single seven-second pass. This is 12½ times speedier than the World War II rate in a single pass.

Developed by the Air Materiel Command's Equipment laboratory here and Ryan Industries, Detroit, the new system is designed primarily for the C-119, but it is readily adaptable for other types of assault-transport and airfreighters.

Twenty 500-pound bundles of supplies are suspended on trolleys which ride a single rail running the length of the plane's fuselage. Each of the bundles wears a compact parachute. A single push of the salvo button opens the cargo doors in the forward section, activates a driving motor, and releases each bundle as it contacts the drop point above the cargo doors. A static line on each bundle pulls out the chute as the paracargo clears the aircraft.

Pan Am Serves Bremen

NEW YORK—Willis G. Lipscomb, vice president-traffic and sales of Pan American World Airways, has announced the inauguration of service to Bremen, Germany. This completes "the final link in a complete internal German-Austrian air service" offered by the airline. Three flights a week are operated from Berlin to Bremen.

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1 A comprehensive and fully illustrated booklet, *Package Engineering*. Slanted toward the user, it nevertheless gives a detailed study of the technical aspects of corrugated box design. The book fills 24 pages and features 46 illustrations.

2 *The Co-Pilot*, a free directory of Esso airports in 26 states. Contains such data as grades of aviation gas handled, class or size of fields, hours during which service can be expected, etc.

3 New York State airport map and directory. Measures 28" x 21". Supplies all needed information concerning airports in that state.

4 Reference file of air express uses. Put up in handy form. An excellent file for the progressive traffic man. Presents interesting case histories which should be of value.

5 A dramatic, 40-page booklet which tells all about how an airline is operated and what makes it tick. Four-fifths of the book comprise excellent pictures. You'll like this.

6 Sample back number of the *American Import & Export Bulletin*, giving news of developments in the foreign trade

industry. Covers Customs, Commerce, Agriculture, Treasury, and State Departments thoroughly. Reports on changes in laws, rules, regulations, etc.

7 Official Civil Aeronautics Board regulations of international air freight forwarders. Complete text, covering definition, classification and exemption, limitations and conditions, letters of registration, insurance, and general data.

8 A handsome, eight-inch, plastic rule, also showing the metric scale on the reverse side. This is offered by a well-known freight forwarding firm. If you want more than one, please specify on coupon.

9 File-sized booklet designed and written for the purpose of taking the guesswork out of selecting and using corrugated and solid-fibre shipping cases. Includes the advantages, applications, composition, forms, properties, and sealing techniques of case sealing adhesives for hand or machine sealing operations. Illustrated.

10 A catalog of 150 pages detailing a comprehensive list of aviation supplies and materials. Special index sim-

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plifies the finding of items. Only airlines, airport operators, etc., may apply for this free book.

11 *American Foreign Trade Definitions*, a 32-page book of high value to shippers everywhere. Includes a chart showing the various steps taken from the time a shipment leaves the consignor to the moment it reaches the consignee. Produced and offered by one of the larger freight forwarding companies.

12 A complete, 40-page list of independent foreign freight forwarders registered with the Federal Maritime Board under General Order No. 72. The only one of its kind published.

13 Civil Aeronautics Board's Economic Regulations governing domestic air freight forwarders. This is the complete official text.

14 An attractive folder describing the operations of one of the outstanding domestic air freight forwarding outfits.

15 Six-page, two-color brochure prepared by Mobilift Corporation, illustrating its two new 2,000-pound capacity Lev-R-Matic Drive Fork Lift Trucks.

16 A domestic and international air freight forwarder offers a booklet showing nine ways on how to show a profit on your shipping.

17 Complete information on the Grip-A-Tab line of automatic dispensers of sealing tape. Will handle tapes as narrow as a quarter-inch and as wide as eight inches. Can take care of all heavy-duty tapes.

18 An attractive and valuable wall chart in color, showing the proper procedures in storing gummed tape, the use of automatic dispensers, and the application of gummed tape. Should be on the walls of all shipping departments. Illustrations tell the story in a glance.

19 *What Every Shipper Should Know*, a 24-page, fully illustrated manual devoted to proper packaging with sealing tape. Includes directions for sealing various types of packages—telescope cartons, soft-wraps, irregular shapes, etc. Also contains essential excerpts of regulations covering parcel post, railway express, air express, and motor carrier.

20 A complete directory of all Railway Express Agency offices which provide air express service. Offices are listed alphabetically to facilitate detection. Should be on the desk of every traffic man and shipper.

21 *The Blue Book of Packaging*—a 24-page, fully-illustrated booklet showing the various methods of securing shipments with steel strapping. Covers every conceivable type of container. Includes a strapping schedule indicating savings effected through the use of such strapping.

22 *Handbook of Material Handling with Industrial Trucks*—71 pages of information of particular significance to volume shippers. Illustrated with photographs and charts. Composed of four sections including (1) Evaluation of Industrial Truck Handling, (2) Material Handling Management, (3) Organizing and Industrial Truck System, and (4) Practical Truck Engineering.

23 *Float Packaging*—a 12-page, three-color, illustrated booklet on Kimpak creped wadding, a versatile interior packaging material. Demonstrates its various uses: blocking and bracing; flotation; absorbent packing; surface protection.

24 A Certified Job Study prepared for the warehousing industry. Analysis shows how \$3,000 a year is saved on one item alone, with mass handling. Man-hour costs cut 50 to 75 percent and storage space increased up to 300 percent.

25 Traffic men and other executives always are interested in the efficient maintenance of business records and effective control over all phases of the department. Here's an 80-page illustrated book in color, *Kardex Visible Record Con-*

trol. Describes various combinations of record forms which may be incorporated in Kardex pockets and the great variety of colored signal control methods used on the visible margin of the records.

26 Accessory Date Sheet on fork extensions for handling loads longer than those ordinarily carried on the regular forks of a lift truck.

27 A Certified Job Study showing how a certain line was able to reduce terminal storage and save time in loading and unloading materials. In one of the illustrated cases, a job which formerly required 72 man-hours was cut to 12; in another, an eight-man-hour operation was reduced to a mere 20 minutes.

28 *Your Foreign Shipping Handbook*, a descriptive booklet, in color, issued by the Foreign Traffic Department of American Express. Introduces in graphic form the various services of the company's international shipping setup.

29 TWA's new air freight folder, which explains why shipping-by-air aids business. Gives examples of some low rates for certain commodities. Includes a map of TWA's coast-to-coast service and connecting routes.

30 Attractive illustrated eight-page brochure which shows how handling time can be cut 85%. Excellent for executives whose firms afford warehouses or who are located at terminals airports, etc.

31 Complete details on a speedy method for tagging boxes for storage or shipment by means of an automatic one-hand tacker for driving staples and fastening tapes to various types of containers. Easily assembled and disassembled. Also a new-type kit for holding 1,000 staples and which fits into a vest pocket.

32 Twenty-eight-page booklet, in color, which describes the functions of overhead trolley conveyors. Profusely illustrated. Visual lesson on the valuable work of overhead conveyors.

33 Ready reference catalog of the Mercury line of materials handling equipment. Includes tractors, trailers, and lift trucks. Well illustrated and in color.

34 A study of a certain area which proved that the intelligent use of containers can get the shipper more miles per shipping dollar. Interesting reading.

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35 A certificated international air freight forwarder is offering an attractive folder which describes its own consolidation and forwarding set-up.

36 Latest issue of a valuable magazine which includes many useful tips on the use of steel strapping in packaging shipments. Well illustrated.

American Gets Route From N.Y.-Newark to Toronto

WASHINGTON, D. C.—Authorization to provide nonstop service between New York-Newark and Toronto, Canada, has been approved by the Civil Aeronautics Board. An application by Colonial Airlines for a similar route has been turned down.

Although American has been operating between New York and Toronto for some time, it had not been authorized to make the nonstop flights which Trans-Canada Air Lines has been offering to the public. American's route to the Canadian city will continue to serve Albany, Syracuse, Rochester, Buffalo, Wilkes-Barre, Scranton-Binghamton, and Elmira-Corning on a number of flights.

Air Malta Hauling Cars

VALETTA, MALTA.—Operating a chartered Bristol Freighter, Air Malta has inaugurated a car-hauling service between Malta and Tunis. The first vehicle to make the journey was an RAF car which was flown from Luqa Airport in Malta to North Africa in 105 minutes. According to airline officials, the air trip is not only faster but cheaper. It is expected that similar flights of cars will be made to Sicily.

Slick Serves Indianapolis

INDIANAPOLIS—David M. Graham, Slick Airways' Midwestern Division manager, has announced the all-cargo airline's new service to this city. The first flight, which arrived from the West Coast, brought some 13,000 pounds of California fashions, manufactured goods, cut flowers, and produce.

Emery at New Offices

NEW YORK—Emery Air Freight Corporation, CAB-authorized air forwarders, has moved its executives offices from the Emery Air Terminal, 314 East 39th Street, to larger quarters at 301 Second Avenue, it was announced by John C. Emery, president.

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NEW EQUIPMENT

FOR THE
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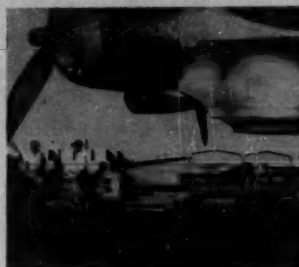
NEW CARGO CARTS that increase ground handling efficiency have been developed by United Air Lines. These will be used at seven major terminals on United's system.

Produced by the Foreman Manufacturing Company, Chicago, the carts are of all-steel construction, with beds 56 inches wide and 116 inches long. Wheels are shod with pneumatic tires and the front end pivots on a swivel wheel. Maximum load is 168 cubic feet and 3,000 pounds. This is double the capacity of carts previously used. Fifty have been ordered.

Four side gates and the end gate of each cart are easily lowered for convenient handling of pre-loaded pallets by lift forks. A box at the forward end contains a tarpaulin that can be unreeled over tubular-steel crossbows to cover cargo in bad weather. The tarpaulin is slit vertically so

that any of the five gates can be opened without exposing other sections.

The front-wheel brake assembly is controlled by the tow bar. When carts are



not in use, brakes are set by placing the tow bar in an upright position. Lowering the bar for manual or tractor moving, automatically releases the brakes. A standard alligator hitch links the carts together.

According to the airline the carts embody suggestions made by United's cargo handlers and E. B. Musil, staff assistant for cargo service. They will be used at New York, Chicago, Denver, Seattle, Portland, Los Angeles, and San Francisco.

First Bonded Storage For Idlewild Airport

NEW YORK—The Port of New York Authority has announced that it will establish a general order warehouse at the New York International Airport (Idlewild). It will be used exclusively for bonded air cargo, and is to be operated by the Manhattan Storage and Warehouse Company.

The news was hailed at once by representative customs brokers and importers who long have felt the need for such a warehouse.

It is understood that the following airlines will lease space in the new structure: Pan Am, TWA, BOAC, Seaboard and Western, Northwest, National, Air France, FAMA, KLM, Sabena, LAV, and SAS.

Change of Fortune in Korea Brings Recall of Airliners

WASHINGTON, D. C.—Intervention by Red China in the United Nations' effort in Korea has brought the recall of at least 29 commercial air transports to the Pacific airlift. The seriousness of the new situation was underscored by reports of the possibility that the United States' entire commercial four-engine fleet would be enlisted in the lift. One of the officials to make such an assertion was Representative Carl Hinshaw (Calif., R.).

In point of ton-miles hauled, the Pacific lift is now recognized as an even greater cargo-hauling achievement than Operation Vittles.

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SCHEDULED AIRLINE

INTERNATIONAL AIR CARGO RATE TABLES—Continued

RATES (See Note)						RATES (See Note)						RATES (See Note)					
Destination	Airport and Airline	4th	3rd	2nd	1st	Destination	Airport and Airline	4th	3rd	2nd	1st	Destination	Airport and Airline	4th	3rd	2nd	1st
Bombay, India	MIA K	.40	.24	.18	W,F	Bombay, India	IDL BO	2.05	1.54	.93	Dly	Col. Columbia	MIA P	.84	.27	.20	Dly
Bombay, India	LGA P	.53	.41	.31	W,F	Bombay, India	LGA TW	2.05	1.54	.93	W,F	Col. Columbia	LGA P	.84	.27	.20	Th
Bombay, India	MSY P	.84	.28	.15	Dly	Bombay, India	IDL K	2.10	1.62	.95	T,W,Th,Fa	Col. Columbia	MSY P	.80	.25	.20	Dly
Bombay, India	HOU P	.80	.35	.15	Dly	Bombay, India	LGA P	2.05	1.54	.93	Dly	Col. Columbia	HOU P	.80	.25	.20	Dly
Bombay, India	BRO P	.80	.35	.15	Dly	Bombay, India	BOS P	2.05	1.54	.93	Dly	Col. Columbia	BRO P	.80	.25	.20	Dly
Bombay, India	LAX P	.77	.31	.15	Th	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LGA P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	MSY P	.84	.28	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	HOU P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	BRO P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LAX P	.77	.31	.15	Th	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LGA P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	MSY P	.84	.28	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	HOU P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	BRO P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LAX P	.77	.31	.15	Th	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LGA P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	MSY P	.84	.28	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	HOU P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	BRO P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LAX P	.77	.31	.15	Th	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LGA P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	MSY P	.84	.28	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	HOU P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	BRO P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LAX P	.77	.31	.15	Th	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LGA P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	MSY P	.84	.28	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	HOU P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	BRO P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LAX P	.77	.31	.15	Th	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LGA P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	MSY P	.84	.28	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	HOU P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	BRO P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LAX P	.77	.31	.15	Th	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LGA P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	MSY P	.84	.28	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	HOU P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	BRO P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LAX P	.77	.31	.15	Th	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LGA P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	MSY P	.84	.28	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	HOU P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	BRO P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LAX P	.77	.31	.15	Th	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LGA P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	MSY P	.84	.28	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	HOU P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	BRO P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LAX P	.77	.31	.15	Th	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LGA P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	MSY P	.84	.28	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	HOU P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
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Bombay, India	LAX P	.77	.31	.15	Th	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LGA P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
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Bombay, India	HOU P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
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Bombay, India	LAX P	.77	.31	.15	Th	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LGA P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	MSY P	.84	.28	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	HOU P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	BRO P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LAX P	.77	.31	.15	Th	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LGA P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	MSY P	.84	.28	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	HOU P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	BRO P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LAX P	.77	.31	.15	Th	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LGA P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	MSY P	.84	.28	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	HOU P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	BRO P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LAX P	.77	.31	.15	Th	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LGA P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	MSY P	.84	.28	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	HOU P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	BRO P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LAX P	.77	.31	.15	Th	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LGA P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	MSY P	.84	.28	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	HOU P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	BRO P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LAX P	.77	.31	.15	Th	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	LGA P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	MSY P	.84	.28	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	HOU P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly
Bombay, India	BRO P	.80	.35	.15	Dly	Bombay, India	IDL AF	2.05	1.54	.93	Dly	Col. Columbia	LAX P	.70	.25	.20	Dly

INTERNATIONAL AIR CARGO RATE TABLES—Continued

RATES (See Note)										RATES (See Note)										RATES (See Note)									
Destination	Airport and Airline	43	44	45	Depart	Destination	Airport and Airline	43	44	45	Depart	Destination	Airport and Airline	43	44	45	Depart												
Obolenski, Grand Zee	MIA P	.41	.31	.15	Dly	Florianopolis, Brazil	LGA P	1.70	1.70	.25	Dly except Th	Guayaquil, Cont'd.	CHI B	.77	.47	.15	M.W.F.s												
	MSY P	.47	.39	.15	Dly		MIA P	1.49	1.49	.25	Dly except Th		CRP B	.74	.45	.15	M.W.F.s												
	BRO P	.50	.41	.15	Dly		MSY P	1.84	1.84	.25	Dly except Th		DAL B	.77	.47	.15	M.W.F.s												
	LAX P	.52	.45	.15	Dly		HOU P	1.87	1.87	.25	Dly except W		YIP B	.77	.47	.15	M.W.F.s												
Cartagena, Colombia	MIA P	.54	.29	.15	Sa, W, F, Th	Fort de France, Martinique	BRG P	1.78	1.78	.25	Dly except W		PIOT B	.77	.47	.15	M.W.F.s												
	LGA P	.54	.27	.15	Sa, Th		LAX P	2.08	2.08	.25	Dly		DOU B	.74	.45	.15	M.W.F.s												
	MSY P	.55	.29	.15	Sa, W, F, Th	Fort William, Port William	LGA T	4.30	143	.15	Dly		IND B	.76	.46	.15	M.W.F.s												
	HOU P	.55	.29	.15	T, Th, F, Sa	Fortaleza, Ceara, Brazil	LGA P	1.23	1.23	.25	Dly except F		LAD B	.75	.46	.15	M.W.F.s												
	LAX P	.57	.32	.15	T, Th, F, Sa		LGA P	1.23	1.23	.25	Dly except F		MSY P	.71	.43	.15	M.W.F.s												
Canton, Ecuador	MSY P	.73	.42	.15	Sa, M, Th, F		MSY P	1.44	1.44	.25	Dly except F		SAT B	.74	.45	.15	M.W.F.s												
	HOU P	.78	.48	.15	Sa, W, Th		HOU P	1.89	1.89	.25	Dly except Th		HAV B	.60	.34	.15	M.W.F.s												
	BRO P	.78	.48	.15	Sa, W, Th		BRG P	1.89	1.89	.25	Dly except Th	Haifa, Israel	IDL B	1.84	1.18	.25	T, Th, Sa												
	LAX P	.78	.48	.15	Sa, W, Th		LAX P	1.89	1.89	.25	Dly except Th		IDL B	1.83	1.17	.25	Dly												
Caracas, N.W.I.	LGA P	.40	.31	.20	Dly	Frankfurt-on-Main, Germany	BOS P	1.10	.83	.20	Four Wkly		BOS T	2.64	.955	.10	Dly												
	MIA P	.40	.32	.20	Dly		IDL P	1.13	.85	.20	T, W, F, Sa		IDL B	1.13	.85	.20	Dly												
	MIA K	.40	.32	.15	M, F		IDL K	1.13	.85	.20	T, W, F, Sa		MIA B	1.13	.85	.20	Dly												
	UL K	.40	.34	.17	M, F		UL K	1.18	.89	.22	Sa		IDL K	1.13	.85	.20	T, W, F												
Castroville, Brazil	LGA P	1.88	1.68	.25	F		IDL SW	.97	.78	.20			BOS P	1.10	.83	.20	Dly												
	MIA P	1.48	1.48	.25	F		IDL SW	.97	.78	.20			IDL P	1.13	.85	.20	Dly												
	MSY P	1.88	1.68	.25	F		IDL SW	.97	.78	.20			IDL AF	1.10	.83	.20	Dly												
	HOU P	1.88	1.68	.25	F		IDL SW	.97	.78	.20			BOS AF	1.10	.83	.20	Dly												
	BRO P	1.73	1.78	.25	Th		IDL SW	.97	.78	.20			LGA P	.23	.19	.15	Dly												
	LAX P	2.08	2.08	.25	Th		IDL SW	.97	.78	.20			BOS P	.23	.19	.15	Dly												
Dakar, Senegal, F. W. Africa	LGA P	1.79	.97	.25	M, Th		IDL SW	.97	.78	.20			UL T	.260	.260	.05	M, W, F, Sa												
	IDL AF	1.83	1.14	.25	Thurs Wkly		IDL SW	.97	.78	.20			LGA C	.30	.10	.11	Dly												
	BOS AF	1.49	1.12	.25			IDL SW	.97	.78	.20																			
Damascus, Syria	LGA P	1.84	1.15	.25			IDL SW	.97	.78	.20																			
	BOS P	1.81	1.10	.25			IDL SW	.97	.78	.20																			
	IDL SW	1.43	1.10	.25			IDL SW	.97	.78	.20																			
	IDL AF	1.55	1.17	.25			IDL SW	.97	.78	.20																			
	BOS AF	1.32	1.15	.25			IDL SW	.97	.78	.20																			
	IDL BO	1.84	1.16	.25	Sa, M, T, Th, F		IDL SW	.97	.78	.20																			
	IDL SS	1.84	1.16	.25	Dly ex. M, F		IDL SW	.97	.78	.20																			
	IDL K	1.84	1.16	.25	P, W		IDL SW	.97	.78	.20																			
	UL K	1.86	1.22	.25	Sa, W		IDL SW	.97	.78	.20																			
	LGA TW	1.84	1.16	.25			IDL SW	.97	.78	.20																			
Der-es-Salam, Tanganyika	LGA P	1.80	1.42	.25	Sa, M, T, Th, F		IDL SW	.97	.78	.20																			
	IDL AF	1.80	1.42	.25	Sa, Th		IDL SW	.97	.78	.20																			
	BOS AF	1.80	1.40	.25			IDL SW	.97	.78	.20																			
Des Moines, Australia	IDL BO	2.72	2.04	.25	Sa, M, T, Th, F		IDL SW	.97	.78	.20																			
Diad, Panama	MIA P	.43	.22	.20	Dly		IDL SW	.97	.78	.20																			
	MSY P	.45	.26	.20	Dly		IDL SW	.97	.78	.20																			
	HOU P	.48	.28	.20	Dly		IDL SW	.97	.78	.20																			
	BRO P	.48	.28	.20	Dly		IDL SW	.97	.78	.20																			
	LAX P	.77	.50	.20	Dly		IDL SW	.97	.78	.20																			
Dhaka, India	IDL BO	2.06	1.84	.25	Sa, M, T, Th, F		IDL SW	.97	.78	.20																			
	LGA P	2.06	1.84	.25			IDL SW	.97	.78	.20																			
	BOS P	2.02	1.81	.25			IDL SW	.97	.78	.20																			
	LAX P	3.09	2.22	.25			IDL SW	.97	.78	.20																			
	SFO P	3.09	2.22	.25			IDL SW	.97	.78	.20																			
	PDZ P	3.09	2.22	.25			IDL SW	.97	.78	.20																			
	SEC P	3.09	2.22	.25			IDL SW	.97	.78	.20																			
	IDL K	2.06	1.84	.25	Sa, W, Th, F		IDL SW	.97	.78	.20																			
	IDL K	2.19	1.84	.25	Sa		IDL SW	.97	.78	.20																			
Dhaka, Saudi Arabia	LGA TW	1.80	1.35	.25	Sa, W, F		IDL SW	.97	.78	.20																			
	IDL P	1.80	1.35	.25			IDL SW	.97	.78	.20																			
	BOS P	1.77	1.32	.25			IDL SW	.97	.78	.20																			
	IDL K	1.80	1.33	.25			IDL SW	.97	.78	.20																			
	UL K	1.91	1.44	.25	W		IDL SW	.97	.78	.20																			
Doha, F. W. Africa	IDL AF	1.73	1.30	.25	Weekly		IDL SW	.97	.78	.20																			
	BOS AF	1.70	1.28	.25			IDL SW	.97	.78	.20																			
Dublin, Eire	IDL BO	.84	.71	.20	Th		IDL SW	.97	.78	.20																			
	MIA BO	1.13	.84	.20	Dly		IDL SW	.97	.78	.20																			
	UL K	1.10	.82	.22	Sa		IDL SW	.97	.78	.20																			
	IDL K	1.00	.80	.22	Sa, Th		IDL SW	.97	.78	.20																			
	LGA TW	.94	.71	.20	Dly		IDL SW	.97	.78	.20																			
	BOS TW	.81	.68	.20	M, W, F		IDL SW	.97	.78	.20																			
	CHI TW	.80	.78	.20	F		IDL SW	.97	.78	.20																			
	YIP TW	.80	.72	.20	F		IDL SW	.97	.78	.20																			
	PHL TW	.80	.72	.20	Sa		IDL SW	.97	.78	.20																			
	IDL P	1.66	.80	.20			IDL SW	.97	.78	.20																			
	BOS P	1.03	.77	.20			IDL SW	.97	.78	.20																			
Durango, Dgo. Mex.	ELF L	.13	.11	.25			IDL SW	.97	.78	.20																			
Durban, So. Afr.	IDL BO	2.01	1.81	.25	Sa, M, T, Th, F		IDL SW	.97	.78	.20																			
Düsseldorf, Ger.	IDL SS	1.10	.80	.20	Dly		IDL SW	.97	.78	.20																			
	IDL S	1.10	.80	.20	Sa, Th		IDL SW	.97	.78	.20																			
	IDL BO	1.10	.82	.20	Sa, M, T, Th, F		IDL SW	.97	.78	.20																			
	MIA BO	1.14	.86	.20	Dly		IDL SW	.97	.78	.20																			
	IDL K	1.10	.82	.20	Th, F		IDL SW	.97	.78	.20																			
	UL K	1.14	.86	.22	W		IDL SW	.97	.78	.20																			
	IDL AF	1.10	.80	.20			IDL SW	.97	.78	.20																			
	BOS AF	1.07	.81	.20			IDL SW	.97	.78	.20																			
	BOS P	1.07	.81	.20			IDL SW	.97	.78	.20																			
	LAX P	1.10	.80	.20			IDL SW	.97	.78	.20																			
East London, U. of S. Africa	IDL BO	2.10	1.85	.25	Dly		IDL SW	.97	.78	.20																			
Edinburgh, Scotland	MIA BO	1.11	.84	.20	Dly		IDL SW	.97	.78	.20																			
Elmhurst, Alberta, Canada	LGA T	.80	.31	.10	Dly		IDL SW	.97	.78	.20																			
	CTB W	.10	.10	.10	Sa		IDL SW	.97	.78	.20																			
Elmhurstville, Belgian Congo	IDL S	1.80	1.42	.25	Sa, Th, Th		IDL SW	.97	.78	.20																			
	IDL P	1.80	1.43	.25			IDL SW	.97	.78	.20																			
Emmerich, Rhine	MIA P	.67	.36	.10	T		IDL SW	.97	.78	.20																			
	MSY P	.73	.43	.15	T		IDL SW	.97	.78	.20																			
	HOU P	.76	.46	.15	M		IDL SW	.97	.78	.20																			
	BRO P	.76	.46	.15	M		IDL SW	.97	.78	.20																			
	LAX P	.88	.58	.20	M		IDL SW	.97	.78	.20																			
Fairbanks, Alaska	SEA P	.40	.15	.15	Dly		IDL SW	.97	.78	.20																			

INTERNATIONAL AIR CARGO RATE TABLES—Continued

RATES (See Note)					RATES (See Note)					RATES (See Note)							
Destination	Airport and Airlines	1st	2nd	3rd	Depart	Destination	Airport and Airlines	1st	2nd	3rd	Depart	Destination	Airport and Airlines	1st	2nd	3rd	Depart
Honolulu, T. H.	LAX P	71	57	15	Dly	Khartoum, Anglo- Egypt, Sudan	IDL BO	1.78	1.34	35	Dly	Lima, Peru, Cont'd.	LKD B	97	87	15	Sa,M,W,F,Th
"	SFO P	71	57	15	Two Dly	"	IDL AF	1.78	1.34	35	Thurs Wkly	"	MSY B	90	82	15	Sa,M,W,F,Th
"	PDX P	71	57	15	Th.Sa	"	BOG AF	1.78	1.34	35	"	"	SAT B	90	82	15	Sa,M,W,F,Th
"	SEA P	71	57	15	Th.Sa	Kimberley, So. Afr.	IDL S	2.00	1.60	35	"	"	BRO B	97	87	15	Sa,M,W,F,Th
"	U P	71	57	15	Dly	Kinshasa, Belg. Congo	IDL S	1.80	1.40	35	Sa,T,Th	"	CHI P	97	87	15	Sa,M,W,F,Th
"	CHI NW	88	71	15	Thurs Wkly	Jamaica, Jamaica	MIA P	30	20	15	Two Dly	"	CRP B	90	82	15	Sa,M,W,F,Th
"	CLE NW	90	73	15	Thurs Wkly	"	BOG S	30	20	15	Sa,T,Th	"	DAL B	90	82	15	Sa,M,W,F,Th
"	WIP NW	90	73	15	Thurs Wkly	"	CHI S	30	20	15	"	"	FTW B	90	82	15	Sa,M,W,F,Th
"	MPS NW	94	65	15	Thurs Wkly	"	IND S	30	20	15	Sa,T,Th	"	MIA B	90	82	15	Sa,M,W,F,Th
"	LGA NW	94	78	15	Thurs Wkly	"	BOG S	30	20	15	Dly	"	"	74	60	15	Dly
"	PIT NW	91	74	15	Thurs Wkly	"	CHI S	30	20	15	"	"	"	"	"	"	"
"	SEA NW	71	57	15	Thurs Wkly	"	YIP S	30	20	15	Dly	"	"	"	"	"	"
"	QEG NW	74	60	15	Thurs Wkly	"	ELV S	30	20	15	Dly	"	"	"	"	"	"
"	DCA NW	90	73	15	Thurs Wkly	"	FWA S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	QEG S	30	20	15	Dly	"	"	"	"	"	"
"	QEG A	88	71	30	Dly	"	HOT S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	HOT S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	HOU S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	IND S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	JAN S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	MEM S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	HAU A	89	73	30	Dly	"	STL S	30	20	15	Dly	"	"	"	"	"	"
"	CHI A	88	71	30	Dly	"	STL										

INTERNATIONAL AIR CARGO RATE TABLES—Continued

RATES (See Note)							RATES (See Note)							RATES (See Note)						
Destination	Airport and Airline	Class	Weight	Volume	Per Value	Depart	Destination	Airport and Airline	Class	Weight	Volume	Per Value	Depart	Destination	Airport and Airline	Class	Weight	Volume	Per Value	Depart
Mannan, Brazil....	LGA P*	1.44	1.44	.25	Dly except Su		Mexico City, Cont'd	LAX P*	.30	.25	.15	Dly		N'Dala, Rhodesia....	IDL S	1.90	1.43	.25	Su,T,Th	
"	MIA P*	1.44	1.44	.25	Dly except Su		"	MSY TA	.41	.30	.15	Dly		"	IDL BO	1.90	1.43	.25	Dly	
"	MSY P*	1.44	1.44	.25	Dly except Su		"	DAL A	.20	.14	.10	Dly		"	"	"	"	"	"	
"	BRO P*	1.62	1.62	.25	Dly except Su		"	LAX A	.20	.14	.10	Dly		"	"	"	"	"	"	
"	ROU P*	1.64	1.64	.25	Dly except Su		"	ELF A	.25	.15	.10	Dly		"	"	"	"	"	"	
"	LAX P*	1.70	1.70	.25	Dly except Su		"	BAT A	.15	.11	.10	Dly		"	"	"	"	"	"	
Manila, Philippines....	LGA TW*	.97	.73	.30	Dly		"	ELF L	.20	.17	.25	Dly		"	"	"	"	"	"	
"	IDL K*	1.06	.90	.30	Su,Th		Midway Island....	LAX P	1.18	.68	.30	M,T,W,F		"	"	"	"	"	"	
"	UL K*	1.10	.93	.30	Su,Th		"	SFO P	1.18	.68	.30	M,T,W,F		"	"	"	"	"	"	
"	IDL SS	1.01	.79	.30	Dly		"	BOE AP	1.18	.68	.30	M,T,W,F		"	"	"	"	"	"	
"	IDL AP	1.11	.84	.30	Dly		"	PDX P	1.18	.68	.30	M,T,W,F		"	"	"	"	"	"	
"	BOE AP	1.06	.82	.30	T,Th,Su		"	SEA P	1.18	.68	.30	M,T,W,F		"	"	"	"	"	"	
"	IDL S	1.06	.80	.30	T,Th,Su		"	"	"	"	"	"		"	"	"	"	"	"	
"	LGA TW*	.97	.73	.30	Dly		"	"	"	"	"	"		"	"	"	"	"	"	
"	BOE TW*	.94	.71	.30	M,W,F		"	"	"	"	"	"		"	"	"	"	"	"	
"	CHI TW*	1.02	.78	.30	F		"	"	"	"	"	"		"	"	"	"	"	"	
"	YIP TW*	.98	.74	.30	F		"	"	"	"	"	"		"	"	"	"	"	"	
"	PHL TW*	.97	.73	.30	Dly		"	"	"	"	"	"		"	"	"	"	"	"	
"	IDL BO	.97	.73	.30	Dly		"	"	"	"	"	"		"	"	"	"	"	"	
"	LAX P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	SFO P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	PDX P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	SEA P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	LGA P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	BOE P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	CHI P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	YIP P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	PHL P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	IDL BO	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	LAX P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	SFO P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	OAK P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	CLE P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	PHL P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	IDL BO	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	LAX P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	SFO P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	OAK P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	CLE P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	PHL P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	IDL BO	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	LAX P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	SFO P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	OAK P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	CLE P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	PHL P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	IDL BO	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	LAX P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	SFO P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	OAK P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	CLE P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	PHL P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	IDL BO	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	LAX P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	SFO P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	OAK P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	CLE P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	PHL P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	IDL BO	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	LAX P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	SFO P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	OAK P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	CLE P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	PHL P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	IDL BO	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	LAX P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	SFO P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	OAK P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	CLE P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	PHL P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	IDL BO	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	LAX P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	SFO P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	OAK P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	CLE P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	PHL P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	IDL BO	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	LAX P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	SFO P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	OAK P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	CLE P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	PHL P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	IDL BO	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	LAX P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	SFO P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	OAK P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	CLE P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	PHL P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	IDL BO	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	LAX P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	SFO P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	OAK P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	CLE P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	PHL P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	IDL BO	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"	"	
"	LAX P	2.36	1.77	.25	Ta,Sa		"	"	"	"	"	"		"	"	"	"	"		

INTERNATIONAL AIR CARGO RATE TABLES—Continued

RATES (See Note)					RATES (See Note)					RATES (See Note)				
Destination	Airport and Airline	Class	Rate	Remarks	Destination	Airport and Airline	Class	Rate	Remarks	Destination	Airport and Airline	Class	Rate	Remarks
Ottawa, Ont., Canada	LGA C	.97		Dly	Frederick, Scotland	IDL SS	.94	.71	.20 Dly	San Ignacio de Velasco, Bolivia	MIA P	1.15	.63	.20 M.F.
Palmburg, N.E.I.	IDL BO	2.40	1.00	.25 Dly	Franklin, Pa.	IDL T	.94	.71	.20 Dly	"	MOU P	1.22	.70	.25 M.F.
"	IDL K	2.40	1.00	.25 T.W,Th,F	"	DAL B	.41		.17 Dly	"	BRO P	1.23	.72	.25 M.F.
Palermo, Italy	UL K	2.53	1.04	.25 Dly	"	FTW B	.41		.17 Dly	"	LAX P	1.23	.72	.25 M.F.
Panama City, Panama	IDL LI	1.34	.90		"	SAT B	.34		.17 Dly	San Juan, Bolivia	MIA P	1.19	.60	.20 M.F.
"	MIA P	.39	.19	.15 Dly	Puerto Cabezas, Nic.	MSY TA	.90	.47	M.W.F.	"	MOU P	1.22	.70	.25 M.F.
"	HOU P	.45	.25	.15 Dly	Puerto Carles, Hond.	MEX TA	.44	.38	T,Th,Sa	"	BRO P	1.23	.72	.25 M.F.
"	BRO P	.48	.20	.15 Dly	"	MSY TA	.42	.34	M.W.F.	San Jose, Costa Rica	MIA P	.43	.24	.15 Dly
"	LAX P	.41	.43	.18 Dly	Puerto Suarez, Bolivia	MEX TA	.35	.18	T,Th,Sa	"	MSY P	.47	.29	.15 Dly
"	CHI B	.61	.31	.15 M,W,F,Sa	"	MIA P	1.15	.63	M.W.F.	"	BRO P	.48	.28	.15 Dly
"	CRP B	.48	.39	.15 M,W,F,Sa	"	BRO P	1.23	.72	M.W.F.	"	LAX P	.48	.28	.15 Dly
"	DAL B	.61	.31	.15 M,W,F,Sa	"	LAX P	1.23	.72	M.W.F.	"	MSY TA	.43	.28	Dly except Su
"	YIP B	.61	.31	.15 M,W,F,Sa	Quito, Ecuador	MIA P	.64	.34	Dly except Su	"	MEX TA	.51	.30	Dly except Su
"	MSY B	.45	.35	.15 M,W,F,Sa	"	MSY P	.70	.41	Dly except Su	San Juan, Puerto Rico	LGA P	.33	.19	.05 First Day
"	MSY TA	.64	.48	M.W.F.	"	BRO P	.72	.43	Dly except Th	"	MIA P	.15	.12	.05 Twice Dly
"	MEX TA	.58	.28	T,Th,Sa	"	LAX P	.72	.43	Dly except Th	"	CHI P	.39	.23	.15 Dly
"	MIA K	.64	.15	Sa,F	"	BRO P	.72	.43	Dly except Th	"	YIP P	.39	.23	.15 Dly
"	UL K	.60	.37	.17 F	Rangoon, Burma	IDL BO	2.19	1.05	.25 Dly	"	LGA P	.39	.23	.15 Dly
Panama City, Panama	IDL LI	1.34	.90	M.W.F.	Rio de Janeiro, Brazil	LGA P	1.48	1.48	Dly except F	San Luis Potosi, S.L.P., Mexico	MIA P	.15	1.00	.05 Dly
"	LGA P	.44	.25	.15 M,Th	"	MIA P	1.15	.75	Dly except F	San Salvador, El Salvador	MIA P	.43	.21	.15 Dly
"	MSY P	.47	.25	.15 M,Th	"	BRO P	1.23	.72	Dly except F	"	MSY P	.43	.21	.15 Dly
"	HOU P	.47	.25	.15 M,Th	"	HOU P	1.23	.72	Dly except Th	"	BRO P	.44	.24	.15 Dly
"	BRO P	.47	.25	.15 M,Th	Reggio Calabria, Italy	BRO P	1.23	.72	Dly except Th	"	LAX P	.44	.24	.15 Dly
"	LAX P	.47	.25	.15 M,Th	"	LAX P	1.23	.72	Dly except Th	"	MSY TA	.44	.24	.15 Dly
"	MIA K	.47	.25	.15 M,Th	Rosario, Cuba	IDL LI	1.34	.90	Dly except Su	"	MEX TA	.44	.24	.15 Dly
"	UL K	.47	.25	.15 M,Th	Rosario, Cuba	LGA P	1.48	1.48	Dly except Su	San Jose, Costa Rica	MIA P	.15	.12	.05 First Day
Paris, France	IDL S	1.98	.80	.20 Su,T,Th	Rosario, Cuba	MSY P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 Twice Dly
"	IDL SW	.91	.74	.20 Su,T,Th	Rosario, Cuba	BRO P	1.48	1.48	Dly except Su	"	CHI P	.39	.23	.15 Dly
"	IDL BO	1.08	.80	.20 Su,T,Th	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	YIP P	.39	.23	.15 Dly
"	IDL S	1.11	.84	.24 Su,T,Th	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	LGA P	.39	.23	.15 Dly
"	IDL AP	1.08	.80	.20 Su,T,Th	Rosario, Cuba	MIA P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 First Day
"	BOS AF	1.03	.70	.20 Su,T,Th	Rosario, Cuba	BRO P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 Twice Dly
"	IDL K	1.06	.80	.20 Su,T,Th	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	CHI P	.39	.23	.15 Dly
"	UL K	1.10	.80	.20 Su,T,Th	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	YIP P	.39	.23	.15 Dly
"	LGA TW	1.06	.80	.20 Su,T,Th	Rosario, Cuba	MIA P	1.48	1.48	Dly except Su	"	LGA P	.39	.23	.15 Dly
"	BOS TW	1.03	.70	.20 Su,T,Th	Rosario, Cuba	BRO P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 First Day
"	PHL TW	1.07	.81	.20 Su,T,Th	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 Twice Dly
"	YIP TW	1.07	.81	.20 Su,T,Th	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	CHI P	.39	.23	.15 Dly
"	CHI TW	1.11	.84	.24 Su,T,Th	Rosario, Cuba	MIA P	1.48	1.48	Dly except Su	"	YIP P	.39	.23	.15 Dly
"	IDL P	1.13	.85	.20 Su,T,Th	Rosario, Cuba	BRO P	1.48	1.48	Dly except Su	"	LGA P	.39	.23	.15 Dly
"	BOS P	1.03	.70	.20 Su,T,Th	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 First Day
"	LAX P	1.03	.70	.20 Su,T,Th	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 Twice Dly
"	MIA P	.39	.19	.15 Dly	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	CHI P	.39	.23	.15 Dly
"	HOU P	.45	.25	.15 Dly	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	YIP P	.39	.23	.15 Dly
"	BRO P	.48	.20	.15 Dly	Rosario, Cuba	MIA P	1.48	1.48	Dly except Su	"	LGA P	.39	.23	.15 Dly
"	LAX P	.41	.43	.18 Dly	Rosario, Cuba	BRO P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 First Day
"	MIA K	.47	.25	.15 Dly	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 Twice Dly
"	UL K	.47	.25	.15 Dly	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	CHI P	.39	.23	.15 Dly
Paraguay, Brazil	LGA P	1.03	.70	.20 Su,T,Th	Rosario, Cuba	MIA P	1.48	1.48	Dly except Su	"	YIP P	.39	.23	.15 Dly
"	MSY P	.45	.25	.15 Dly	Rosario, Cuba	BRO P	1.48	1.48	Dly except Su	"	LGA P	.39	.23	.15 Dly
"	HOU P	.48	.20	.15 Dly	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 First Day
"	BRO P	.48	.20	.15 Dly	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 Twice Dly
"	LAX P	.41	.43	.18 Dly	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	CHI P	.39	.23	.15 Dly
"	MIA K	.47	.25	.15 Dly	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	YIP P	.39	.23	.15 Dly
"	UL K	.47	.25	.15 Dly	Rosario, Cuba	MIA P	1.48	1.48	Dly except Su	"	LGA P	.39	.23	.15 Dly
Paraguay, Brazil	LGA P	1.03	.70	.20 Su,T,Th	Rosario, Cuba	BRO P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 First Day
"	MSY P	.45	.25	.15 Dly	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 Twice Dly
"	HOU P	.48	.20	.15 Dly	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	CHI P	.39	.23	.15 Dly
"	BRO P	.48	.20	.15 Dly	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	YIP P	.39	.23	.15 Dly
"	LAX P	.41	.43	.18 Dly	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	LGA P	.39	.23	.15 Dly
"	MIA K	.47	.25	.15 Dly	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 First Day
"	UL K	.47	.25	.15 Dly	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 Twice Dly
Paraguay, Brazil	LGA P	1.03	.70	.20 Su,T,Th	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	CHI P	.39	.23	.15 Dly
"	MSY P	.45	.25	.15 Dly	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	YIP P	.39	.23	.15 Dly
"	HOU P	.48	.20	.15 Dly	Rosario, Cuba	MIA P	1.48	1.48	Dly except Su	"	LGA P	.39	.23	.15 Dly
"	BRO P	.48	.20	.15 Dly	Rosario, Cuba	BRO P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 First Day
"	LAX P	.41	.43	.18 Dly	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 Twice Dly
"	MIA K	.47	.25	.15 Dly	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	CHI P	.39	.23	.15 Dly
"	UL K	.47	.25	.15 Dly	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	YIP P	.39	.23	.15 Dly
Paraguay, Brazil	LGA P	1.03	.70	.20 Su,T,Th	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	LGA P	.39	.23	.15 Dly
"	MSY P	.45	.25	.15 Dly	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 First Day
"	HOU P	.48	.20	.15 Dly	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 Twice Dly
"	BRO P	.48	.20	.15 Dly	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	CHI P	.39	.23	.15 Dly
"	LAX P	.41	.43	.18 Dly	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	YIP P	.39	.23	.15 Dly
"	MIA K	.47	.25	.15 Dly	Rosario, Cuba	MIA P	1.48	1.48	Dly except Su	"	LGA P	.39	.23	.15 Dly
"	UL K	.47	.25	.15 Dly	Rosario, Cuba	BRO P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 First Day
Paraguay, Brazil	LGA P	1.03	.70	.20 Su,T,Th	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 Twice Dly
"	MSY P	.45	.25	.15 Dly	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	CHI P	.39	.23	.15 Dly
"	HOU P	.48	.20	.15 Dly	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	YIP P	.39	.23	.15 Dly
"	BRO P	.48	.20	.15 Dly	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	LGA P	.39	.23	.15 Dly
"	LAX P	.41	.43	.18 Dly	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 First Day
"	MIA K	.47	.25	.15 Dly	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 Twice Dly
"	UL K	.47	.25	.15 Dly	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	CHI P	.39	.23	.15 Dly
Paraguay, Brazil	LGA P	1.03	.70	.20 Su,T,Th	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	YIP P	.39	.23	.15 Dly
"	MSY P	.45	.25	.15 Dly	Rosario, Cuba	MIA P	1.48	1.48	Dly except Su	"	LGA P	.39	.23	.15 Dly
"	HOU P	.48	.20	.15 Dly	Rosario, Cuba	BRO P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 First Day
"	BRO P	.48	.20	.15 Dly	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 Twice Dly
"	LAX P	.41	.43	.18 Dly	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	CHI P	.39	.23	.15 Dly
"	MIA K	.47	.25	.15 Dly	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	YIP P	.39	.23	.15 Dly
"	UL K	.47	.25	.15 Dly	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	LGA P	.39	.23	.15 Dly
Paraguay, Brazil	LGA P	1.03	.70	.20 Su,T,Th	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 First Day
"	MSY P	.45	.25	.15 Dly	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 Twice Dly
"	HOU P	.48	.20	.15 Dly	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	CHI P	.39	.23	.15 Dly
"	BRO P	.48	.20	.15 Dly	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	YIP P	.39	.23	.15 Dly
"	LAX P	.41	.43	.18 Dly	Rosario, Cuba	MIA P	1.48	1.48	Dly except Su	"	LGA P	.39	.23	.15 Dly
"	MIA K	.47	.25	.15 Dly	Rosario, Cuba	BRO P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 First Day
"	UL K	.47	.25	.15 Dly	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	MIA P	.15	.12	.05 Twice Dly
Paraguay, Brazil	LGA P	1.03	.70	.20 Su,T,Th	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	CHI P	.39	.23	.15 Dly
"	MSY P	.45	.25	.15 Dly	Rosario, Cuba	HOU P	1.48	1.48	Dly except Su	"	YIP P	.39	.23	.15 Dly
"	HOU P	.48	.20	.15 Dly	Rosario, Cuba	LAX P	1.48	1.48	Dly except Su	"	LGA P	.39	.23	.15 Dly
"	BRO P	.48	.20	.15 Dly	Rosario, Cuba	HOU P	1.48	1.4						

INTERNATIONAL AIR CARGO RATE TABLES — Continued

RATES (See Note)					RATES (See Note)					RATES (See Note)							
Destination	Airport and Airline	Class	Rate	Depart	Destination	Airport and Airline	Class	Rate	Depart	Destination	Airport and Airline	Class	Rate	Depart			
Stavanger, Norway	IDL SR	1.12	.85	.20	Dly	Tegucigalpa, Hon.	MIA P	.47	.22	.15	Dly	Veracruz, Colo.	MIA P	.12	.08	.05	Dly
Stockholm, Sweden	IDL SR	1.12	.85	.20	Dly	"	MSY P	.40	.22	.15	Dly	"	MIA P	.29	.19	.15	Dly
"	IDL BO	1.12	.85	.20	Dly	"	BRO P	.37	.22	.15	Dly	"	MSY P	.34	.19	.15	Dly
"	MIA BO	1.30	.85	.20	Dly	"	LAX P	.33	.22	.15	Dly	"	BRO P	.31	.16	.15	Dly
"	IDL AF	1.12	.85	.20	Dly	"	MSY TA	.40	.22	.15	Dly except Su	"	BRO P	.19	.11	.15	Dly
"	BOS AF	1.12	.85	.20	Dly	"	MEX TA	.32	.16	.15	Dly except Su	"	LAX P	.35	.20	.15	Dly
"	IDL K	1.12	.85	.20	Sa, W, F, Su	Tehran, Iran	IDL BO	1.81	1.36	.35	Dly	"	DAL B	.42	.20	.15	Dly
"	UL K	1.30	.85	.20	Sa, W	"	IDL AF	1.81	1.36	.35	Weekly	"	PTW B	.42	.20	.15	Dly
"	IDL S	1.12	.85	.20	Sa, T, Th	"	BOS AF	1.78	1.34	.35	Four Weekly	"	LED B	.42	.20	.15	Dly
"	IDL P	1.12	.85	.20	Dly	"	IDL K	1.81	1.36	.35	Sa, Th	"	SAT B	.42	.20	.15	Dly
Stuttgart, Germany	LGA P	1.12	.85	.20	Sa, F	"	UL K	1.93	1.45	.35	Sa, Th	Victoria, Brazil	LGA P	1.06	1.06	.35	M, W, F, Su
"	BOS P	1.10	.83	.20	Sa, F	Tela, Honduras	IDL SS	1.81	1.36	.35	Sa, T, W, Th, Su	"	MIA P	1.41	1.41	.35	M, W, F, Su
"	IDL SR	1.12	.85	.20	Dly	"	MSY TA	.43	.22	.15	"	"	MSY P	1.80	1.80	.35	M, W, F, Su
"	IDL SR	1.12	.85	.20	Sa, Th	"	MEX TA	.20	.16	.15	"	"	BRO P	1.81	1.81	.35	M, W, F, Su
"	IDL AF	1.12	.85	.20	Dly	Tokyo, Japan	IDL P	2.71	2.04	.35	Sa, F	"	BRO P	.72	.72	.35	Sa, T, F
"	BOS AF	1.10	.82	.20	Dly	"	BOS P	2.68	2.02	.35	Sa, F	"	LAX P	2.08	2.08	.35	Sa, T, W
Sunderland, Sweden	LGA P	1.12	.85	.20	Dly	"	CHI NW	2.36	1.77	.35	Four Weekly	Victoria, B. C.	LGA P	10.12	.375	.10	Dly
Suez, S. S. Islands	LAX P	1.00	1.30	.35	M, Th, Su	"	LAX P	2.36	1.77	.35	Four Weekly	Victoria, B. C.	LGA P	10.12	.375	.10	Dly
"	SFO P	1.00	1.30	.35	M, Th, Su	"	EDF NW	2.36	1.77	.35	Four Weekly	Vienna, Austria	LGA P	1.34	.93	.25	Sa, W, F
"	SFO BC	1.00	1.30	.35	M, Th, Su	"	CHI NW	2.36	1.77	.35	Four Weekly	"	BOS P	1.31	.91	.25	Sa, W, F
"	HNL BC	1.00	1.30	.35	M, Th, Su	"	CLE NW	2.36	1.77	.35	Four Weekly	"	LGA P	1.34	.93	.25	Frequently
"	VR BO	1.00	1.30	.35	M, Th, Su	"	YIP NW	2.36	1.77	.35	Four Weekly	"	IDL BO	1.34	.93	.25	Dly
Sydney, Australia	LAX P	2.01	1.81	.35	M, Th	"	MPS NW	2.36	1.77	.35	Four Weekly	"	IDL AF	1.34	.93	.25	Dly
"	SFO P	2.01	1.81	.35	M, Th	"	YK NW	2.36	1.77	.35	Four Weekly	"	BOS AF	1.31	.91	.25	Dly
"	IDL BO	2.01	1.81	.35	M, Th	"	YK NW	2.36	1.77	.35	Four Weekly	"	IDL SR	1.34	.93	.25	Sa, T, Th, Su
"	SFO BC	2.01	1.81	.35	M, Th, Th	"	YK NW	2.36	1.77	.35	Four Weekly	"	IDL K	1.34	.93	.25	T, W, F, Su
"	HNL BO	1.43	1.08	.35	M, Th	"	YK NW	2.36	1.77	.35	Four Weekly	"	UL S	1.33	.93	.25	Sa, T, Th
"	VR BC	2.01	1.81	.35	M, Th	"	YK NW	2.36	1.77	.35	Four Weekly	"	IDL SR	1.23	.93	.25	Sa, Th
"	IDL AF	2.01	1.81	.35	M, Th	Toronto, Ont., Can.	LGA A	1.80	.0485	.10	Dly	Villahermosa, Mex.	MIA P	.34	.17	.15	Dly
"	BOS AF	2.01	1.81	.35	M, Th	"	ELF L	1.10	.08	.25	Dly	"	MSY P	.30	.16	.15	Dly
Sydney, N. S.	BOS P	2.01	1.81	.35	M, Th	"	IDL LI	1.85	.06	.35	Dly	"	BRO P	.34	.19	.15	Dly
Tripoli, Yemen	SFO P	2.36	1.77	.35	W, Su	"	MIA P	.15	.08	.05	Dly	"	LAX P	.40	.20	.15	Dly
"	OAK P	2.36	1.77	.35	W, Su	"	IDL BO	1.84	1.01	.35	Dly	Västerås, Sweden	IDL SR	1.19	.80	.20	Dly
"	LAX P	2.36	1.77	.35	T, F	Toronto, Ont., Can.	ELF L	1.10	.08	.25	Dly	Wadi Haifa, Arab. Eg. Sudan	IDL BO	1.03	1.36	.35	Dly
"	REA P	2.36	1.77	.35	T, F	Toronto, Ont., Can.	ELF L	1.10	.08	.25	Dly	Wake Island	LAX P	1.85	1.16	.30	M, T, F, Su
"	LGA P	2.36	1.77	.35	T, F	Trapani, Italy	IDL LI	1.85	.06	.35	Dly	"	SFO P	1.85	1.16	.30	M, T, F, Su
"	CHI P	2.36	1.77	.35	T, F	Trinidad, Cuba	MIA P	.15	.08	.05	Dly	"	PDX P	1.85	1.16	.30	Sa
"	DCA P	2.36	1.77	.35	T, F	"	IDL BO	1.84	1.01	.35	Dly	"	SEA P	1.85	1.16	.30	Sa
"	CLE P	2.36	1.77	.35	T, F	Tripoli, Libya	IDL BO	1.84	1.01	.35	Dly	Warsaw, Poland	IDL SR	1.30	.98	.20	Sa, Th, Su
"	YIP P	2.36	1.77	.35	T, F	Trujillo, Honduras	MSY TA	.48	.27	.15	T, Th, Su	"	IDL AF	1.30	.98	.20	Dly
"	DEN P	2.36	1.77	.35	T, F	"	MEX TA	.48	.27	.15	T, Th, Su	"	IDL AF	1.30	.98	.20	Dly
"	CHI NW	2.36	1.77	.35	T, F	Tucuman, Argentina	MIA P	1.28	.71	.15	P	"	IDL AF	1.30	.98	.20	Dly
"	CLE NW	2.36	1.77	.35	T, F	"	MSY P	1.24	.78	.15	P	"	IDL AF	1.30	.98	.20	Dly
"	YIP NW	2.36	1.77	.35	T, F	"	HOU P	1.27	.81	.15	Th	"	IDL AF	1.30	.98	.20	Dly
"	DCA NW	2.36	1.77	.35	T, F	"	BRO P	1.27	.81	.15	Th	"	IDL AF	1.30	.98	.20	Dly
"	MPS NW	2.36	1.77	.35	T, F	"	LAX P	1.27	.81	.15	Th	"	IDL AF	1.30	.98	.20	Dly
"	LAX NW	2.36	1.77	.35	T, F	"	MSY P	1.24	.78	.15	P	"	IDL AF	1.30	.98	.20	Dly
"	PDX NW	2.36	1.77	.35	T, F	"	HOU P	1.27	.81	.15	Th	"	IDL AF	1.30	.98	.20	Dly
"	DCA NW	2.36	1.77	.35	T, F	"	LAX P	1.27	.81	.15	Th	"	IDL AF	1.30	.98	.20	Dly
"	SFO NW	2.36	1.77	.35	T, F	"	MSY P	1.24	.78	.15	P	"	IDL AF	1.30	.98	.20	Dly
"	OAK NW	2.36	1.77	.35	T, F	"	HOU P	1.27	.81	.15	Th	"	IDL AF	1.30	.98	.20	Dly
Yokohama, Japan	MIA P	.72	.38	.15	Dly	Tunja, Tunisia	IDL AF	1.34	.94	.25	Four Weekly	Whitcomb, Canada	SEA P	.35	.14	.10	T, Su
"	MSY P	.78	.48	.30	Dly	"	LGA TW	1.27	.80	.25	P	Windsor, Ont., Can.	LGA A	.40	.25	.15	Dly
"	HOU P	.81	.48	.30	Dly	"	HOU P	.71	.39	.15	Th	"	CHI A	.40	.25	.15	Dly
"	BRO P	.81	.48	.30	Dly	"	LAX P	.74	.42	.15	W	"	LGA T	3.60	.6855	.10	Dly
"	LAX P	.94	.89	.30	Dly	"	MSY P	.71	.39	.15	Th	Winnipeg, Man., Canada	LGA T	5.75	.30	.10	Dly
Yokohama, Mad.	IDL AF	2.76	2.07	.15	Weekly	"	HOU P	.74	.42	.15	W	"	GFK W	.04	.00	.10	Dly
"	BOS AF	2.73	2.04	.15	Weekly	"	LAX P	.74	.42	.15	W	Zurich, Switzerland	IDL SR	1.13	.85	.20	Sa, Th
Yokohama, Mexico	HOU P	.13	.08	.15	Dly	"	MSY P	.74	.42	.15	W	"	IDL S	1.13	.85	.20	Sa, T, Th
"	BRO P	.10	.08	.15	Dly	"	HOU P	.74	.42	.15	W	"	IDL S	1.13	.85	.20	Dly
"	LAX P	.39	.38	.15	Dly	"	LAX P	.74	.42	.15	W	"	IDL S	1.13	.85	.20	Sa, T, Th
Yokohama, Mad.	IDL AF	2.90	1.73	.35	Weekly	"	MSY P	.74	.42	.15	W	"	IDL S	1.13	.85	.20	Sa, T, Th
"	BOS AF	2.87	1.71	.35	Weekly	"	HOU P	.74	.42	.15	W	"	IDL S	1.13	.85	.20	Sa, T, Th
Yokohama, Morocco	IDL AF	1.25	.94	.25	Weekly	"	LAX P	.74	.42	.15	W	"	IDL S	1.13	.85	.20	Sa, T, Th
"	BOS AF	1.22	.92	.25	Weekly	"	MSY P	.74	.42	.15	W	"	IDL S	1.13	.85	.20	Sa, T, Th
Yokohama, Mexico	MIA P	.43	.21	.15	Dly	"	HOU P	.74	.42	.15	W	"	IDL S	1.13	.85	.20	Sa, T, Th
"	MSY P	.39	.19	.15	Dly	"	LAX P	.74	.42	.15	W	"	IDL S	1.13	.85	.20	Sa, T, Th
"	HOU P	.39	.21	.15	Dly	"	MSY P	.74	.42	.15	W	"	IDL S	1.13	.85	.20	Sa, T, Th
"	BRO P	.37	.17	.15	Dly	"	HOU P	.74	.42	.15	W	"	IDL S	1.13	.85	.20	Sa, T, Th
"	LAX P	.43	.21	.15	Dly	"	LAX P	.74	.42	.15	W	"	IDL S	1.13	.85	.20	Sa, T, Th

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U. S. OVERSEAS AIR CARGO

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instituted a new Airwaybill/Consignment Note, which was designed to allow shipments on a single document over its system and other carriers throughout the world. According to the company, this new document has been officially accepted in many countries in lieu of the usual Consular Invoice, Certificate of Origin and/or Commercial Invoices. However, shippers or their agents on occasion are required to prepare such documents; may have to obtain an export license; and are required to prepare a Shipper's Export Declaration for consignments of merchandise to foreign countries or to and from noncontiguous territories of the United States. The carrier may advise the shipper as to documentary requirements, but the shipper, or more frequently the forwarder, performs the documentation function.

When delivering shipments to Pan American, or to one of its authorized cargo sales agents by means of another carrier or trucker, the shipper prepares a form known as the shipper's letter of instructions. The form fulfills two purposes, first, to provide authorization to Pan American or its cargo sales agents to issue and sign the airwaybill in the name of the shipper, and second, to provide all details necessary for the issuance of the airwaybill in full conformance with the type of service desired by the shipper.

The carrier may check the export documents after they have been prepared, and if they are incorrect, it communicates with the shipper or his agent. If the shipper so instructs, insurance in an amount equal to the valuation of the goods as declared by the shipper in the airwaybill, may be obtained by the carrier. When documents are in order, the carrier presents them with the airwaybill to the customs officer, who stamps approval on the export declaration. The carrier then checks the ship's manifest against approved export declarations, and returns the declarations to Customs. The airwaybill and copies of the commercial invoice, as required, accompany the shipment. A copy of the airwaybill is returned to the shipper and another copy is forwarded to the consignee with notice of arrival of shipment. Shippers may designate routings for shipments on the airwaybill, but the carrier is authorized to change the designated routings without incurring any liability. At junction points, Pan American handles all transfers from its receiving station to other lines.

Pick-up, delivery, city terminal service, and insurance charges are not included in, but are in addition to, the carrier's transportation charges. Other charges not included in the airport-to-airport rate are storage charges, expenses incurred in expediting goods through Customs, charges imposed by governmental authority, costs of repairing faulty packing, charges for carriage of goods reforwarded or transhipped by other transportation services, advanced charges, and c.o.d. service charges.

The chief exceptions to general acceptability of goods for carriage by air are consignments of extremely high value; those inadequately packed or marked; those of extreme length, unusual shape, or excessive weight; and specified articles which are considered too dangerous to carry by air. Shipments valued in excess of \$100,000 and unusual shipments of the type mentioned will not be accepted unless special arrangements are made with the carrier. Perishables, compressed gases, inflammable liquids and inflammable solids may in some instances be carried by air if prescribed conditions are met, but in other cases may be prohibited cargo. Small-arms, ammunition, animals and livestock, drugs and pharmaceuticals, firearms, magnetic material, metallic mercury, and human corpses are accepted only under certain conditions; while acids, certain chemicals, explosives, oxidizing materials, and poisonous articles are among the commodities which are not acceptable for air movement.

(Continued on Page 32)

TABLE 27.—Revenue Ton-Miles of Scheduled Express and Freight Service, International and Overseas American Flag Carriers, 1946-48¹

Carrier	1946				
	1st quarter	2d quarter	3d quarter	4th quarter	Calendar year total
American Airlines.....	111,316	251,681	276,983	191,709	1,131,689
American Overseas Airlines.....	.....	.....	.....	1,131	1,131
Boeing Airways.....	.....	.....	.....	.....	.....
Chicago & Southern Air Lines.....	.....	.....	.....	.....	.....
Colonial Air Lines.....	.....	.....	185	2,232	2,417
Eastern Air Lines.....	.....	.....	.....	.....	.....
National Airlines.....	.....	.....	.....	.....	.....
Northwest Airlines.....	.....	.....	.....	.....	.....
Pan American Airways.....	332,596	315,366	406,110	399,283	1,453,355
Pan American Overseas Airways.....	.....	.....	.....	.....	.....
Latin American Division.....	1,873,712	2,112,225	2,439,341	2,797,037	9,222,315
Atlantic Division.....	258,693	256,723	227,247	171,706	1,014,369
Pacific Alaska Division.....	.....	.....	112,630	330,912	443,542
Alaska Operations.....	.....	.....	53,183	87,300	140,483
Total, Pan American.....	2,542,666	2,681,111	2,831,489	3,009,932	11,065,198
Trans World Airlines.....	43,999	58,575	572,193	399,236	1,083,903
United Air Lines.....	13,234	13,983	17,381	18,179	62,777
Total, International and overseas American flag carriers.....	2,714,123	3,157,609	3,879,002	3,008,142	13,068,938

Carrier	1947				
	1st quarter	2d quarter	3d quarter	4th quarter	Calendar year total
American Airlines.....	236,512	333,283	327,274	624,886	1,511,955
American Overseas Airlines.....	.....	.....	.....	.....	.....
Boeing Airways.....	.....	.....	.....	.....	.....
Chicago & Southern Air Lines.....	.....	.....	.....	.....	.....
Colonial Air Lines.....	6,972	21,885	12,966	29,637	63,460
Eastern Air Lines.....	14,120	14,250	33,017	61,881	153,278
National Airlines.....	5,150	15,139	11,679	79,275	110,243
Northwest Airlines.....	56,900	78,419	113,549	155,042	303,910
Pan American Airways.....	421,890	413,570	412,315	422,660	1,650,435
Pan American Overseas Airways.....	.....	.....	.....	.....	.....
Latin American Division.....	3,094,923	4,083,893	3,869,385	5,346,066	16,394,267
Atlantic Division.....	322,791	356,433	300,130	1,990,211	2,779,555
Pacific Alaska Division.....	.....	.....	101,635	1,012,940	1,114,575
Alaska Operations.....	.....	.....	122,428	249,393	371,821
Total, Pan American.....	4,186,172	5,090,241	5,170,786	8,008,380	22,355,579
Trans World Airlines.....	555,728	832,784	728,118	989,554	3,106,184
United Air Lines.....	18,171	12,074	12,058	15,836	58,139
Total, International and overseas American flag carriers.....	5,963,100	6,136,072	6,027,912	10,799,254	22,896,511

Carrier	1948				
	1st quarter	2d quarter	3d quarter	4th quarter	Calendar year total
American Airlines.....	318,427	431,999	337,828	552,140	1,639,494
American Overseas Airlines.....	.....	.....	.....	.....	.....
Boeing Airways.....	.....	.....	.....	.....	.....
Chicago & Southern Air Lines.....	.....	.....	.....	.....	.....
Colonial Air Lines.....	54,567	3,802	15,863	23,451	97,683
Eastern Air Lines.....	13,115	15,672	18,930	17,590	65,313
National Airlines.....	84,292	106,116	101,422	101,320	393,150
Northwest Airlines.....	48,222	58,373	43,639	56,012	206,246
Pan American Airways.....	225,019	343,274	427,084	574,203	1,569,580
Pan American Overseas Airways.....	.....	.....	.....	.....	.....
Latin American Division.....	4,182,333	4,579,080	4,582,296	5,333,033	18,676,742
Atlantic Division.....	1,316,953	1,138,128	1,442,111	1,936,741	5,833,933
Pacific Alaska Division.....	.....	.....	.....	.....	.....
Alaska Operations.....	849,791	917,818	1,044,105	1,869,032	4,680,746
Total, Pan American.....	6,667,822	7,697,121	7,788,512	10,999,806	32,152,261

¹ Explanatory notes:

- American Airlines did not report its United States-Mexico operations separately from domestic operations prior to 1947.
- International service by American Express Airlines was inaugurated in June 1942, but commercial operations by the company, which became American Overseas Airlines in October 1945, did not start until Jan. 1, 1946.
- Boeing Airways inaugurated its international service on June 4, 1946.
- Chicago and Southern Air Lines inaugurated its international service on Nov. 1, 1946.
- Colonial Air Lines inaugurated regularly scheduled international service on Aug. 1, 1947.
- Eastern Air Lines inaugurated regularly scheduled overseas service on Sept. 9, 1946.
- National Airlines inaugurated international service on Dec. 15, 1946.
- Northwest Airlines inaugurated international service on Sept. 1, 1946.
- Trans World Airlines inaugurated regularly scheduled international service on Feb. 5, 1946.
- United Air Lines inaugurated overseas service on May 1, 1947.

Source: Reports of carriers to CAB.

TABLE 28.—Revenue Tons of Cargo Carried, Revenue Ton-Miles and Average Length of Haul, International and Overseas American Flag Carriers, Scheduled Service, Year 1948

Carrier	Revenue cargo ton-miles	Revenue cargo tons carried	Average length of haul per ton carried (Miles)
American Airlines.....	1,443,682	2,179.8	662.4
American Overseas Airlines.....	2,714,269	2,708.2	2,714.269
Boeing Airways.....	42,101	2,408.1	17.5
Chicago & Southern Air Lines.....	156,161	171.6	910.0
Colonial Air Lines.....	65,313	31.2	2,125.4
Eastern Air Lines.....	497,155	296.3	1,677.8
National Airlines.....	393,150	839.4	468.3
Northwest Airlines.....	1,072,780	606.0	1,762.0
Pan American Airways.....	1,779,127	1,172.7	1,517.0
Pan American Overseas Airways.....	18,308,551	13,200.0	1,386.3
Latin American Division.....	5,734,256	1,666.1	3,444.0
Atlantic Division.....	4,680,746	1,379.0	3,401.6
Pacific Operations.....	3,353,723	2,466.0	1,363.3
Total, Pan American.....	32,150,256	18,645.3	1,721.8
Trans World Airlines.....	4,362,679	1,080.0	4,039.6
United Air Lines.....	41,953	125.0	335.8
United Air Lines.....	166,290	60.0	2,771.5
Total, International and overseas American flag carriers.....	45,336,330	30,832.3	1,486.4

Source: Carrier reports to CAB.

GUEST EDITORIAL

(Continued from Page 5)

ranges to equip an entire apartment house development, all the furniture for a hotel, coin vending machines, a turbine generator, and a ship's propeller.

The Pacific airlift serves as a dramatic demonstration to shippers of the potentialities and value of international air cargo.

Operating with Pan American as the prime contractor a pool of aircraft from Eastern, National, American, and Capital flew in four months three million pounds of supplies over the 6,700-mile route to the men on the battlefields.

STRATOFREIGHTER

(Continued from Page 6)

(power section) fire extinguisher system in the nacelle; the CAA does not. The increased quantity of CO₂ required for the military aircraft requires a completely different system than on the commercial. Another item preventing certification of military transport aircraft is the CAA requirement for a fuel dumping system.

If it is necessary for commercial transport aircraft why not for military? Both carry passengers who are entitled to equivalent standards of safety. The aircraft manufacturer could produce better aircraft for less money if differences in opinion such as these were resolved.

COMMERCIAL OPERATIONS

Much has been written concerning the ideal cargo airplane. The basic requirements are fairly well agreed upon and can be summarized as follows:

(a) *It must accommodate a wide variety of loads.*

Specialized cargo aircraft, e.g., aircraft with refrigerated cargo compartments, are not required for the foreseeable air cargo market. The ideal cargo airplane therefore must be versatile and capable of handling any type of cargo for which there is a demand for air shipment. Limitations of the aircraft due to floor loading, cabin dimensions, door sizes, or total payload must not result in rejections of goods offered for shipment. A few such rejections can discourage considerable air cargo business.



Sir William P. Hildred, the International Air Transport Association's director general (second from right), appears pleased as he meets with three IATA presidents—past, present, and future—at the recent parley in San Francisco. Left to right are Sir Miles Thomas, chairman, British Overseas Airways Corporation, who was elected to preside over the 1951 IATA general meeting in Great Britain; Warren Lee Plesman, chairman, Trans World Airlines, current IATA president; Hildred; and Dr. Albert Plesman, president, KLM Royal Dutch Airlines, whose term ended with the opening of the 1950 meeting.

(b) *It must be designed to satisfy the requirements for rapid ground handling of cargo.*

Reduced time between shipper and receiver is the primary objective of air shipment. Therefore, time saved between terminals must not be lost in ground handling. However, airplane performance, which controls to a large extent the direct costs, must not, and need not be severely penalized to provide for efficient ground handling of cargo. It is frequently said that the ideal cargo aircraft must have its floor level at truck bed height. Many studies have been made to determine the penalty resulting from complete compliance with this requirement.

These studies show that the weight empty penalty for a high wing airplane is between 1.5 and 3% as compared to an equivalent low wing airplane. In the *Stratofreighter* a compromise is made by providing the lower cargo compartment door sills at truck bed height. This, then, allows for 30% of the cargo volume to be loaded directly from the truck bed without vertical lift.

The large rear doors allow for

straight-in loading of large pieces of equipment or large crates that are awkward to handle through the conventional side door. Cargo can be loaded at the aft door directly from open bed trucks backing in under the cargo hoist. This hoist can lift loads up to 12,000 pounds and traverse them the entire length of the cabin. It is controllable by a simple push-button control from either the ground or the aircraft.

Another important feature required to reduce loading time is multiple doors. The *Stratofreighter* is provided with two large doors one at either end of the upper or main cargo compartment and one smaller door for each of the lower compartments. This not only decreases time for loading and unloading but provides for easy segregation of load and off-loading at intermediate stops.

(c) *Direct operating costs per ton-mile must be low enough to encourage the development of increased air cargo business.*

The *Stratofreighter*, because of its high load, low-drag wing and clean design is aerodynamically efficient. The importance of high speed for cargo air-

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craft has been emphasized by many studies. When overnight delivery from Eastern production centers to Western market areas can be assured, the air cargo salesman will be able to offer a service that will attract much new air cargo business. Further, the reduction in transit time will encourage expanded use of air shipment for perishable produce. But even more important than the reduction of flight time is the effect of speed on direct operating costs per ton-mile. Its high speed combined with high payload capacity is primarily responsible for the low direct operating costs of the *Stratofreighter*. Even though the direct operating costs per hour or per mile are higher, when these costs are put in terms of costs per ton-mile, it is possible to achieve for medium ranges (approximately 1,500 miles) a direct operating cost of less than four cents per ton-mile.

With the aircraft manufacturer making available a cargo aircraft capable of high performance and direct operating costs far below those possible with converted passenger aircraft, the commercial operator has available the tool with which he can assure the continued rapid growth of the air cargo business.

(d) *Cargo aircraft must be pressurized.*

It is generally agreed that pressurization is desirable in order to permit high altitude operation with the attendant advantages of increased speed and over-weather flying. Pressurization also permits carrying live cargoes at high altitudes and it is very desirable for the shipment of certain types of produce. The *Stratofreighter* is designed for a working cabin pressure differential of 6.5 psi which provides for sea level cabin pressures at 15,500 feet or 5500

at 25,000 feet. Cabin pressure is obtained from the four exhaust-driven turbosuperchargers, which also contribute to reduced fuel consumption during high altitude cruise conditions.

MILITARY OPERATIONS

Although versatility is important to the commercial cargo aircraft it is even more important for the military transport. The variety of missions expected of the military transport is shown by the following tabulation of five general types of operations: Personnel transport; Standard cargo transport; transport of combat or heavy equipment; air evacuation; aerial resupply.

(a) Personnel.

For the transport of completely equipped combat personnel, folding canvas seats are provided along the sidewall. These are supplemented by removable folding double seats that can be installed down the center of the main cabin. Capacity as a troop transport, utilizing the lower compartments as well as the main cabin, is 130 men.

(b) Standard cargo.

For the transport of standard cargo a variety of loading methods can be used. For the upper deck, the airplane hoist system can be used for either large crates or pallets loaded with smaller boxes. This hoist will traverse the load forward for exact positioning in the compartment or it can be used to haul rolling equipment up the ramp. Direct loading from trucks into the lower compartments is possible and full standing headroom is provided for the cargo handlers. The use of the conventional forklift is also possible at both forward and aft main doors.

During the Berlin Airlift a conveyor

was used for loading of sacked cargo. During this operation, cargo loads of 40,000 pounds were loaded in as little as 34 minutes and unloaded in 20 minutes. This provides ample evidence of the efficient cargo handling facilities of the *Stratofreighter*.

(c) Heavy equipment.

When necessary to transport combat equipment or vehicles, ramps which retract into the airplane by means of the cargo hoist, are installed. Trucks up to the 1½ ton 6 x 6 can be driven in under their own power. Four standard army ambulances can be carried in the airplane and rolled out ready to go in two minutes and 30 seconds.

Tie-down fittings are provided on the floor on a 20" grid pattern, with additional fittings located on the sidewalls and ceiling structure. Many of these fittings are designed to withstand the high load factors that would result from ditching. In the past when passenger aircraft have been converted to cargo use, the floor and floor support structure has imposed limitations on the type and density of cargo that could be carried and frequently auxiliary floors had to be installed to prevent excessive maintenance. In the *Stratofreighter* the main cabin floor is capable of withstanding distributed loads of 200 pounds per square foot, or concentrated loads up to eight tons. Service experience with this floor has shown it to be extremely rugged. It is of aluminum alloy construction with flat sheet spot-welded to corrugated sheet. The handling of heavy awkward equipment is greatly facilitated by the overhead hoist.

(d) Air evacuation.

A highly important operation for the military transport, which has no counterpart in commercial operations, is air

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evacuation of the sick and wounded. In the fall of 1949, a policy was established calling for all evacuation from overseas bases by air. This policy which was based on peacetime requirements, was promulgated for reasons of economy as well as improved service for evacuees. With the developments in Korea the need for rapid evacuation became urgent. The *Stratofreighter* was immediately put into this service and actual operating experience has shown that each airplane can transport 400 to 500 patients a month from Tokyo to Tripler General Hospital at Honolulu. During the first few months of the Korean war, the number of wounded averaged approximately 2,900 men per month. Evacuation, quickly and comfortably, of all of these wounded from Tokyo to base hospitals in this country could have been accomplished with only 10 *Stratofreighters* had they been used exclusively.

The provisions for handling litter patients are designed into the airplane and the conversion from a cargo airplane to a flying ambulance requires only a few hours. The litter support stanchions fold against the ceiling and the support straps are stowed along the sidewall. Attachments are made to the standard cargo tie-downs in the floor.

Electrical outlets are provided for electrical blankets for those patients suffering from shock. Oxygen outlets are provided at each litter for therapeutic purposes. In addition to the 79 litter patients, a large number of ambulatory patients may be carried.

The maximum capacity for litter patients is 79, but in actual operation only 65 to 70 litters are used since provisions for segregation of patients with contagious diseases, special casts, etc., must be made. Further, consideration is now being given to using the lower aft compartment as a surgical ward. One reason why the *Stratofreighter* is ideal for air evacuation is that the cabin can be held at sea level pressure up to 15,500 feet.

During World War II, thousands of men were evacuated by air but many more had to be evacuated by the slower, more tedious surface transportation because their wounds or illnesses were of a type which would be aggravated by flight at altitude. For example, patients with abdominal wounds cannot be flown in unpressurized aircraft because of gas formation at altitude. With the pressurized cabin there is no restriction on the type of patients. Furthermore, all the patients and attendants alike have a smoother, more comfortable trip because they can fly in the less turbulent high altitude air.

In comparison to evacuation by ship,

use of the modern, versatile cargo transport makes it appear desirable to plan for 100% air evacuation in either peace or war.

With more frequent departures by air there is less need for large field hospitals. The improvement in morale that results when a wounded soldier knows he doesn't have to wait several weeks for the next ship but knows he will be in a base hospital near his home in five or six days has a very beneficial effect in reducing convalescent time.

(e) Aerial resupply.

Another outstanding feature of the *Stratofreighter* that has received little attention during peaceful years is the system provided for aerial resupply. By means of 17 individual trollies, each supporting 1,500 pounds, a total of 25,500 pounds of supplies and equipment can be dropped in an area 150 feet wide by 2,400 feet long. The importance of such a feature is realized when some of the resupply missions of World War II are studied. It is reported that during some of the operations in Europe when our paratroops were completely surrounded and had to be supplied only by air, only 10% of the supplies were recovered on the ground. This poor recovery was due to the wide dispersion caused by the awkward method of pushing the supplies out the door. The aerial delivery system on the *Stratofreighter* is entirely automatic and by means of proper timing and shifting of the trollies prior to release the center of gravity change during the release period never exceeds the allowable limits. Pilots have stated that the change in aircraft trim is practically imperceptible even though over 25,000 pounds of cargo is released in 12 seconds. The possibilities of this method of supply are great, and with increased use of paratroops undoubtedly will fill an important need in tactical operations.

CARGO SAFETY

(Continued from Page 7)

Many factors enter into military shipments besides size, weight, handling, and product value. Vulnerability of the product of packaging to extremes in climate conditions also must be offset.

During World War II, Government authorities specified steel strapped packaging for food, clothing, arms, vehicles, and other vital materials. This precaution prevented loss and damage, at the same time conserving storage space and providing faster handling.

In 1943, the Container Coordinator of the War Production Board approved a poster on strapping for distribution throughout the country. Stressing the importance of correct strap application,

it was entitled, *It May Be a Long, Rough Journey*.

Pointers on the poster may again be helpful to shippers. They were:

- Use strap of correct width and thickness.
- Put all strapping on straight.
- Tighten and seal with suppliers' specified tools.
- Tighten strap, until edges are indented.
- Boxes may shrink—strap when ready to ship.

The shipper's peacetime adage, that the sale is never completed until the goods have been satisfactorily received, seems to take on significance in wartime. Only by maintaining an efficient supply line from the shipping room to the front, can the battle of logistics be won speedily and decisively.

AIR CARGO'S GAIN

(Continued from Page 9)

cerned with air freight have established committees to study the problem.

One such organization is preparing a basic set of standard requirements which may form a guide for the air terminal operators. This is Air Cargo, Inc., which represent a majority of the certificated U. S. passenger carriers in mutual air cargo problems. Through their Industry Advisory Board they have established a committee to prepare and correlate the recommendations of their members. They intend to develop at the earliest possible date a definite program to result in a master plan for air freight terminals that may be used by the agencies responsible for future constructions of this type. Their efforts are being closely coordinated with a similar group appointed by the Airport Operators Council. Joint meetings of these two groups have already transpired.

Likewise, the various military services have been conducting their own surveys and studies for improving the material handling of air logistics. The aircraft manufacturers—Boeing, Douglas, Martin, and Lockheed—during the past three years also have prepared very worthy studies for the improvement of air cargo handling and freight terminal facilities. The Civil Aeronautics Administration has long recognized the need for adequate material handling facilities and terminals. Their Airport Divisions has been extremely cooperative and closely followed the air freight development picture.

Recalling the old adage that two heads are better than one, it seems appropriate that this time that serious consideration be given to coordinating through one central agency the efforts that are now being conducted independently.

An indication of the feasibility of such a suggestion is the Prototype Working Group, of the Civil Transport Aircraft Evaluation and Development Board, of the Air Coordinating Committee, which was established to prepare a set of standard specifications for the cargo transport industry and the United States Government. This group represented a cross section of top level experts from a majority of the principal agencies directly concerned. Their final report is the result of a careful evaluation and blending of the needs problems and requirements of both commercial and military. *Therefore it appears that a similar program should be established with the approval, recognition and support of all phases of the military and commercial field, for air cargo material handling and terminal facilities certainly closely supplement air cargo transport requirements.*

The present serious Korean situation proves the necessity for equipping this nation with a series of adequately appointed and functioning commercial air freight terminals, which could be available immediately to our military services. It is hardly necessary to point out what such terminals could have meant in terms of expediting manpower and materials in the Far East. These facilities would have permitted higher utilization and quicker turn-around times of our all too small airlift fleet of cargo transports. While this is considered the Air Age, it is unfortunate that this country must rely on surface transportation for logistic support in times of emergency.

It is not too late to establish a network of strategic air freight terminals which would greatly reduce ground handling time and thereby increase the efficiency and tonnage of our military and supporting commercial airlift.

To date, air cargo handling has been the forgotten stepchild in a multitude of air transport activities. Until recently, it was not considered of sufficient importance to warrant much scrutiny for possible improvement. Secondly, its volume and economic importance were not sufficient to justify any sizeable expenditures for new equipment, studies, or analyses of methods for improvement. However, airline operators, who are carrying any reasonable volume of air-freight, are unanimous in their opinion that something must be done—and soon—to reduce the mounting spiral in the indirect cost portion relating to ground handling cost. The advancement of air freight volume is being seriously retarded, and will continue to be, until equal consideration and importance are directed towards improvement of ground operation of air cargo. The

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number of airlines that really know their actual costs, for the various phases of air cargo ground handling, can be counted on the fingers of one hand.

Air freight is fully cognizant that it is the baby of the vast transportation family. Its position is similar to that of the motor transport industry 25 years ago. Therefore, why not profit by the experience and mistakes of our older brothers?

Wherever possible, scrutiny and evaluation should be made of the procedures and methods which are successfully used by the motor, rail, and water transport operators. Very few in the air transport industry have studied the techniques now employed in other forms of transportation. This means, not just

an afternoon visit to a truck terminal or a rail terminal, but allocating sufficient time to spend several weeks to prepare on-the-spot analyses and studies of their procedures. After this phase has been completed, similarity of operations and problems which fit into the air freight picture should be undertaken. For example, there is similarity in the freight handled by large long-haul motor truck operators with their own pick-up and delivery operations, and the air freight operation.

In this regard, the operations of Pacific Freight Lines, a large Southern California motor freight line, have been very carefully examined by transportation groups from all over the nation. The New York Port Authority had their experts visit Southern California to

study PFL's operation. Inspection of the Port Authority's two new, large, modern truck terminals, located in lower Manhattan and in Newark, will reveal that many of the principles of PFL have been incorporated on these new terminals. Likewise, officers of the Army Transportation Corps and the Air Force have been assigned for various periods to analyze PFL's operations for transition into the military logistic picture.

There are several motor freight and rail freight terminals in various localities throughout the country which utilize similar material handling techniques as employed by PFL. It is suggested that the nearest such terminal be studied and its procedures analyzed for possible adoption at major air terminals.

For many years the material-handling flow in the loading and unloading of rail cars and motor trucks at freight terminals have been conducted on the same level. The theory that "a straight line is the shortest distance between two points" has never been forgotten. Where terminal facilities permit and are adequate, the material flow is normally conducted across the freight dock. Time and motion studies have proven that level, straight line loading permits minimum handling cost per hundredweight and in the minimum of time.

Undoubtedly, the question has arisen in many minds why Lockheed, as an aircraft manufacturer, should be so interested in the problems of air freight handling and loading. Lockheed has long recognized that the problems presented in the carriage of air cargo, be it commercial or military, are not confined to the airborne phase.

Air transportation has had many years of experience in handling passengers and solving the problems associated therewith. Fortunately, a passenger walks on or off an airplane, and they do not hesitate to let it be known if they are too cold or too warm. Unfortunately, air cargo is a static body, for the most part, that requires handling into and out of the cargo transport as well as through the terminal. If airborne perishables are too cold, they placidly freeze; if they are too warm, they quietly spoil. Air cargo presents a challenge not only to the air carrier, but to the aircraft manufacturer as well, and to all other groups associated therewith.

Lockheed deemed it necessary, therefore, to be thoroughly conversant with all phases of air cargo, be it ground handling or economics, in order to intelligently appraise cargo transport design requirements. With the largest

privately owned air terminal in the country in their own backyard, and with a subsidiary company manufacturing ground handling equipment, Lockheed has tackled air cargo as a family project.

Three years ago, Lockheed Air Terminal, Inc., one of the members of the Lockheed Family, began a study of the requirements necessary for adequate and efficient air freight material handling. The first report was prepared for the use of LAT's management. After examination of this study by several of the industry's air freight men, it was suggested that it be rewritten as a possible guide for general air freight terminal requirements and applicable to any locality. This resulted in the Lockheed Air Cargo Progress Report, *Planning the Air Freight Terminal*, which outlined the objectives, analysis, and a suggested solution to the problems. (See March, April, May, 1950, issues.) Please do not consider this report, however, as a panacea to all air freight handling ailments, but rather as an effort to encourage consideration to this serious problem and encourage future thinking. Since completion of the report and the construction of an air freight terminal model in December, 1949, it has become quite apparent that there is still much research to be done. However, it is

strongly felt that the principles outlined therein are sound.

After preparing a basic building configuration it was found that to make the building functional and provide the necessary tools to properly and efficiently handle air cargo through the terminal, suitable material handling equipment was needed. This has resulted in the third member of the Lockheed Family entering into the air freight picture — the Airquipment Company, a wholly owned subsidiary of Lockheed. This company was purchased some years ago for the specific purpose of designing and fabricating ground handling equipment tailored for the needs of the aviation industry.

Airquipment, during the past six months, has developed a complete line of air cargo handling equipment with which to furnish air freight terminals in order to make them a functional working unit. This has resulted in the Aerobridge, Aerocar, Aerotruck, Aerogarment-rack, and the Aerocooler, as pieces of furniture, or rather equipment, for air freight handling. It is pointed out that this equipment not necessarily need be used in conjunction with separate air freight terminals, but can be adapted to the freight handling section of any existing passenger terminal.

(Concluded Next Month)

U. S. OVERSEAS AIR CARGO

(Continued from Page 27)

FOREIGN FLAG SCHEDULED CARRIERS

Characteristics of Service

In many respects the cargo services rendered by foreign flag carriers to and from the United States are similar to those rendered by competing United States certificated carriers; and rate levels are generally comparable since they are established through agreement of United States and foreign carriers belonging to the various regional conferences of the International Air Transport Association. These rate agreements are subject to appropriate governmental approval. The following description of the services performed by the Scandinavian Airlines System, based on an interview with company officials in November, 1948, reveals aspects of similarity and dissimilarity as between foreign carrier services, exemplified by SAS, and United States certificated carrier services, as illustrated by Pan American Airways in a preceding section.

Scandinavian Airlines System provides pickup service in New York City through contract with an owner-driver. On any call before noon, shipments will

be picked up the same day and delivered to the receiving station at Idlewild Airport. The company also maintains a midtown receiving office for shipments weighing up to 100 pounds. On imports, the consignee usually employs a customs broker, who provides delivery service. Free pick-up and delivery services are offered at Copenhagen, Oslo, and Stockholm.

Cargo business is solicited through direct mailing of letters and advertising leaflets; personal solicitation by salesmen; calls on shippers made by salesmen employed by domestic trunk lines and all-cargo carriers with which SAS has interline agreements; and through agents which are approved by IATA. Methods of obtaining business in Europe are similar, except that outside of the Scandinavian countries, the national airline is usually appointed as general agent; and pooling arrangements are made with rival carriers, under which whatever cargo is offered is divided equally among them. Such cargo pools are prohibited in the United States.

Not more than 20 accounts furnish SAS with 60 percent of its air cargo exports from the United States, the remaining 40 percent being provided by

some 250 smaller active shippers. In its system-wide operations, the carrier has approximately 1,000 accounts. Ten categories of commodities, including machine parts, drugs, pharmaceuticals, and automobile parts, make up 75 percent of the eastbound traffic. In the case of imports, furs, Swiss watches, and orchids account for 75 percent of the trade. Woolens are carried to the United States from England, and samples are moved, especially during the Summer.

With respect to facilities other than aircraft, SAS operates no trucks in the United States. At its principal terminals in Scandinavia—Copenhagen, Oslo, and Stockholm—its trucks are reportedly operated at approximately one-fifth the cost per pick-up or delivery in New York. As in the case of Pan American, loading and unloading is performed by a contractor in New York. Cargo offices are maintained at each airport served and also in Glasgow and Oslo, the airport in the latter case being 35 miles from the city. Small packages are accepted at city ticket offices, both in New York City and abroad. The company does not have warehouse facilities, but at European ports, when space is available at the cargo office, it will hold incoming shipments as long as 30 days. At Idlewild Airport, however, U. S. Customs does not permit imports to remain more than six days, at the end of which time they are taken by Customs trucks to a General Order warehouse in Manhattan. SAS does not provide refrigeration; and the carrier refuses perishables except when in small quantities and packed in dry ice.

In regard to export procedure, SAS does not handle documentation, and responsibility for correctness of export declarations must be assumed by the shipper. However, the carrier holds the power of attorney for some of its large accounts, in order that it may make minor corrections in the documents if necessary; but the shipper's approval is obtained by telephone before such changes are made. While the export documents must be prepared by the shipper or his agent, SAS clears those documents through Customs. Shipments arriving at Teterboro Airport which are to be exported were transferred to Idlewild by a noncertificated cargo carrier, with that carrier and SAS sharing the cost of such service. SAS does no packing, but will repair a carton which has been damaged in transit. Three copies of the airwaybill accompany the shipment, one copy of which is sent to the consignee with the arrival notice. Either SAS or the consignee may clear a shipment through Foreign Customs. Copies of the commercial invoice also accompany the shipment, one of which is kept by Foreign Customs.

On imports, cargo is first placed in

TABLE 29.—Station-to-Station Average Daily Cargo Traffic Flow on All-Cargo Flights of U. S. Certificated Carriers Engaged in U. S. Overseas Air Cargo Services, September 1948
[In pounds]

Carrier	Stations	Average daily flow of express and/or freight	
		South-bound	North-bound
American Airlines	Dallas-Fort Worth-San Antonio	1,565	208
	San Antonio-Monterrey	3,211	354
	Monterrey-Mexico City	3,926	475
Pan American Airways	New York-Gander	93	480
	Gander-Shannon	78	480
	Shannon-London	78	369
	London-Brussels	183	65
	London-Frankfurt (west only)	497	82
	London-Damascus (east only)	271	663
	Brussels-Frankfurt	13	2,287
	Frankfurt-Munich	2	—
	Frankfurt-Vienna (east only)	216	—
	Frankfurt-Istanbul (east only)	112	1
Pan American Airways	Istanbul-Damascus	—	50
	Latin American Division	South-bound	North-bound
	Miami-Ciudad Trujillo (south only)	573	—
	Miami-San Juan	1,337	2
	Ciudad Trujillo-San Juan (south only)	325	—
	San Juan-Caracas (north only)	—	607
	San Juan-Port of Spain	1,984	951
	Caracas-Port of Spain (north only)	—	1,319
	Port of Spain-Helem	1,924	2,225
	Helem-Rio de Janeiro	1,859	2,230
Pan American Airways	Rio de Janeiro-Sao Paulo (south only)	1,742	—
	Rio de Janeiro-Montevideo (north only)	—	1,824
	Rio de Janeiro-Buenos Aires (north only)	—	571
	Sao Paulo-Porto Alegre (south only)	74	—
	Sao Paulo-Montevideo (south only)	42	—
	Sao Paulo-Buenos Aires (south only)	20	—
	Porto Alegre-Montevideo (south only)	45	—
	Montevideo-Buenos Aires	87	1,726
	Pacific-Alaska Division	North-bound	South-bound
	Alaska Operations	—	—
Pan American Airways	Seattle-Ketchikan	4,065	347
	Seattle-Juneau (south only)	1,337	178
	Seattle-Fairbanks	2,451	1,724
	Ketchikan-Juneau (north only)	1,225	—
	Ketchikan-Fairbanks	2,763	292
	Juneau-Whitehorse (north only)	155	—
	Juneau-Fairbanks	1,049	139
	Whitehorse-Fairbanks (north only)	155	—
	Pacific-Alaska Division	West-bound	East-bound
	Pacific Operations	—	—
Pan American Airways	San Francisco-Honolulu	422	22
	Honolulu-Midway	459	9
	Honolulu-Wake (east only)	—	26
	Midway-Wake	452	9
	Wake-Guam	442	51
	Guam-Manila	299	148
	Pan American-Grace Airways	South-bound	North-bound
	Balboa-Guayaquil (south only)	314	—
	Balboa-Lima	—	330
	Guayaquil-Talara (south only)	213	—
	Guayaquil-Lima (south only)	224	—
Trans World Airline	Talara-Lima (south only)	213	—
	Lima-Antofagasta (south only)	145	—
	Lima-Santiago	145	473
	Antofagasta-Santiago (south only)	47	—
	Santiago-Buenos Aires	255	481
	Washington-Philadelphia (east only)	146	—
	Philadelphia-New York (east only)	186	—
	New York-Gander	682	321
	Gander-Shannon	678	528
	Shannon-Paris	666	461
Trans World Airline	Paris-Geneva	686	343
	Geneva-Rome	812	484
	Rome-Athens	790	96
	Athens-Cairo	675	78
	Cairo-Basra	672	30
	Basra-Dhahran	666	30
	Dhahran-Bombay	669	32
	Bombay-Bombay	669	32
	Bombay-Bombay	669	32
	Bombay-Bombay	669	32

Source: Compiled from unpublished records of Analytic Division, Bureau of Economic Regulation, Civil Aeronautics Board.

the custody of United States Customs; and the carrier delivers a certificate to the broker and mails an arrival notice to the consignee. After Customs grants clearance to the broker, the broker pays freight charges and obtains a release from SAS. Not until this release is presented to Customs can the broker get possession of the shipment and effect delivery to the consignee. The carrier may assist the Customs inspector in repacking shipments which have been opened for inspection. Under interline agreement, SAS delivers incoming cargo destined to points beyond New York to any carrier operating from the metropolitan area.

Finally, mention should be made of three forms used by SAS in loading and dispatching DC-6 planes at Idlewild. The first is a "cargo distribution sheet" on which is tabulated the total weights of cargo to be discharged at each station and its location in the airplane. The second is a "weight and balance sheet" on which is entered the total weight of cargo in each section of the plane, from which the center of gravity is calculated. Third, a "flight movement report" is used, on which is noted the weight and location on the plane of cargo to be unloaded at the first two stops. As soon as the plane has taken off, this information is sent by

teletype to the two airports named. After the ship leaves the first stop, a similar report is teletyped to the second and third stops, etc.

U.S. NON-CERTIFICATED IRREGULAR AIR CARRIERS

Organization & Service

As noted in a previous section, a relatively large number of noncertificated airlines have carried some cargo between the continental United States and other areas in the postwar period, but the exact number rendering such service at a given time, or the quantity of such service performed by a given group of carriers, cannot be precisely determined. All large irregular carriers, operating under a Letter of Registration from the CAB, are required to file quarterly flight and statistical reports. The flight reports reveal whether the carriers are predominantly engaged in passenger service or cargo service, and whether operations are conducted chiefly within the continental United States or outside thereof. Carriers are required to report all revenue flights, including those in common carriage under the Letter of Registration, and those in non-common carrier service. The latter could include contract cargo flights, and might also embrace the passenger-carrying flights between a point in the United States (including territories and possessions) and a point outside thereof. Statistical reports filed by the large irregular carriers call for certain traffic data, including tons and ton-miles of cargo, but those statistics are not broken down to indicate the volume of cargo carried within continental United States and between the continental United States and other areas. In addition to these limitations on the adequacy of the data of reporting carriers, it should be pointed out that some carriers fail to file reports at all, or at required time.

Table 33 clearly indicates that large noncertificated irregular air carriers are important participants in United States overseas air cargo services. It is significant that during the third quarter of 1948, the 29 carriers listed made 733 all-cargo flights between points in continental United States and points outside thereof. This is equivalent to an average of 28 round trips per week. By way of comparison, as shown in table 24, United States certificated carriers as of March 1, 1949 had scheduled the equivalent of only 26 all-property round trips per week in United States overseas air service, and foreign scheduled carriers only seven per week. The total number of flights made by irregular carriers was, of course, far less than that of scheduled carriers. During the third quarter of 1948, the 29 car-

TABLE 33.—Number of Exclusively Cargo, and Cargo-Passenger Flights in U. S. Overseas Service, Total Number of Flights Made by Reporting Large Irregular Carriers, Third Quarter, 1948; and Chief Overseas Points Served¹

Carrier (2)	No. of overseas cargo flights (3)	No. of cargo and cargo-passenger flights (4)	Total number of flights (5)	Chief overseas point or area served	No. of cargo and cargo-passenger flights to point (6)	Other points or areas served in cargo and cargo-passenger service
Aerovian Sud Americana, Inc.	136	136	142	Havana, Cuba.....	136	None.
Air Transport Associates, Inc.	20	20	36	Kenai, Alaska.....	10	Cordova and Anchorage, Alaska; Port Hardy, Can. None.
Arctic-Pacific, Inc.	1	27	28	Fairbanks, Alaska...	27	None.
Argonaut Airways Corp.	38	38	115	San Juan, P. R.....	38	Cancun, Venezuela
Caribbean American Lines, Inc.	3	3	12	Maqueta, Venezuela	3	None.
Columbia Air Cargo, Inc.	40	40	50	Fairbanks, Alaska...	38	Anchorage, Alaska.
Conner Air Lines.....	4	4	60	Muracibo, Venezuela	2	Port-au-Prince.
Continental Charters, Inc.	51	51	75	San Juan, P. R.....	51	None.
General Air Cargo, Inc.	0	35	40	Anchorage, Alaska...	35	Do.
Golden North Airways, Inc.	5	7	122	San Juan, P. R.....	7	Do.
Inter-American Airways, Inc.	14	15	61	do.....	9	Colombia; Jamaica.
International Air Freight, Inc.	60	60	206	do.....	50	Mexico; Caracas.
Miami Airline, Inc.	5	35	43	Anchorage, Alaska...	35	None.
Mt. McKinley Airways, Inc.	69	69	409	Carmen, Mexico....	69	Do.
Nationwide Air Transport Service, Inc.	1	2	61	Virgin Islands.....	2	Do.
New England Air Express, Inc.	11	13	44	Anchorage, Alaska...	11	Kodiak, Alaska.
Pacific Alaska Air Express, Inc.	3	8	19	Alaska.....	8	None.
Pearson-Alaska, Inc.	11	11	69	San Juan, P. R.....	10	Colombia.
Saldaña Eduardo E.	4	4	21	Mexico.....	1	None.
Scott Aero Services, Inc.	83	85	106	Frankfurt, Germany	37	Other European points.
Seaboard & Western Airlines, Inc.	54	54	69	Guatemala.....	46	El Salvador.
Skytrain Airways, Inc.	4	9	17	Latin America.....	9	(1) None.
Skyways Inter. Trading & Transp. Co.	4	17	27	Fairbanks, Alaska...	17	None.
Sourdough Air Transport	75	75	78	Havana, Cuba.....	74	Cuba.
Southern Air Express	2	18	54	Anchorage, Alaska...	17	Annette Island, Alaska.
Standard Air Cargo.....	1	46	67	Sitka, Alaska.....	10	Ketchikan and Wrangell, Alaska.
Totem Air Service, Inc.	0	20	41	Fairbanks, Alaska...	14	Annette Island.
Trans-Alaskan Airlines, Inc.	27	63	211	Guam.....	16	Cordova.
Transocean Air Lines.....	733	972	2,332			Wake, Okinawa and points in Europe.

¹ Flights are meant to refer here to one-way flights, i.e., one-half of a round trip in each case. A trip from Miami to San Juan would be counted as 1 flight, and the trip back to Miami as another flight. In the case of several large carriers, flights were made between a number of pairs of intermediate points, but the whole circle flight from origin via those points back to origin was counted as 1 round trip, or 2 flights.

² Flight reports were not available when due for 2 carriers which are known to have performed an appreciable volume of service—Arnold Air Service, Inc., and Trans Caribbean Air Cargo Lines, Inc. 4 carriers—Associated Air Transport, Inc., Aviation Corp. of Seattle, All-American Airways, Inc., and Freight Air, Inc.—each made only one flight on which cargo was carried between continental United States and other areas during the third quarter of 1948.

³ This column refers to flights between the continental United States and other areas on which only cargo was carried.

⁴ This column refers to flights between the continental United States and other areas on which either cargo only, or passengers and cargo combined, were carried.

⁵ This column refers to the total number of flights as defined in footnote¹ above, and includes, in addition to flights reported under columns to the left, exclusive passenger flights or deadhead flights between continental United States and other areas, as well as passenger, cargo, passenger-cargo or deadhead flights within continental United States.

⁶ This column refers to the number of flights to and from the point or area named in the column to the left. The number of flights in this column can be equal to, but not greater than, the number in the column referred to in footnote.

⁷ The data for Skyways International are only approximate, principally because 2 round trips had not been completed when the company made its flight report and were not included.

⁸ The total number of flights is understated owing to omission of many deadhead flights from the flight report. In addition, all data are understated due to omission of data for last 2 weeks of quarter.

Source: Compiled from flight reports filed with CAB by the carriers.

riers in table 33 made approximately 2,332 flights, or an average of approximately 90 round trips per week (including deadhead flights, compared with a total of 225 round trips per week by foreign scheduled carriers, not including non-scheduled flights), and an even larger, though uncalculated, total for United States certificated car-

riers. Moreover, the weekly average of 90 round trips for large irregulars includes a large number of flights within continental United States while the figure for foreign scheduled carriers pertained only to flights between continental United States and other areas. (Continued Next Month)

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